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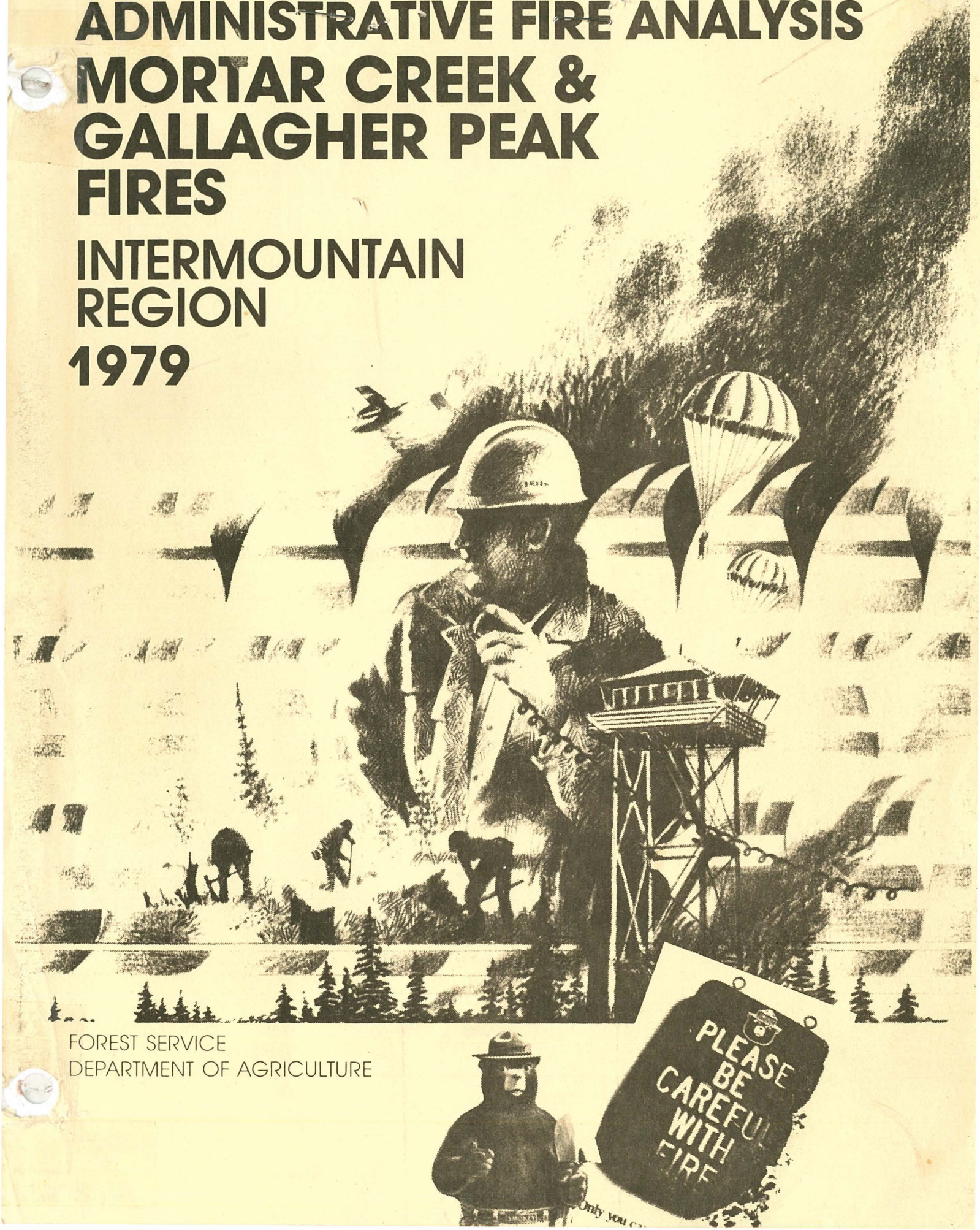
ADMINISTRATIVE FIRE ANALYSIS

MORTAR CREEK & GALLAGHER PEAK FIRES

INTERMOUNTAIN REGION

1979



FOREST SERVICE
DEPARTMENT OF AGRICULTURE

REVIEW OF GALLAGHER PEAK FIRE

Prepared by

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Summary: This report follows the outline in FSM 5194.12 and analyzes the Gallagher Peak Fire which occurred on the Targhee National Forest July 6 to August 20, 1979, and burned 36,600 acres.

I. BACKGROUND INFORMATION

A. Meteorological Conditions:

The weather on the Dubois Ranger District was more severe than normal previous to July 6 when the Gallagher Peak Fire started. The winter snowpack was slightly below normal over the entire Forest and the moisture content of the snow was extremely below normal. The area in which the Gallagher Peak Fire burned normally receives less snow than eastern portions of the Forest and this difference was more extreme during the winter of 1978 to 1979. The area normally receives a lot of precipitation in May, June, and the first part of July. Sporadic wetting rains through August and September were also normal. This is evidenced by the low fire incidence and size normally experienced on the Dubois Ranger District.

The snowpack and precipitation situation for the year resulted in very low moisture content in the 1000-hour fuels from the date weather was taken. This condition worsened as the fire season progressed. Item one in the appendix shows the fire danger from the Dubois Weather Station for 1979 and compares it with the previous 15 years. Item two in the appendix gives the actual weather forecast at Dubois for the month of June, July, and part of August.

Rainfall in the month of June was as follows: June 19 - 0.62 inches; June 21 - 0.01 inches; June 25 - 0.07 inches; and June 23 - 0.02 inches. The rain on June 23 was the last rainfall received before the origin of the Gallagher Peak Fire on July 6.

Although the fire started on July 6, it did not become a major conflagration until August 3. In the month that elapsed, the Dubois Weather Station recorded only 0.39 inches of rain. The burning index for this period averaged in the high fifties and the 1000-hour fuels moisture had declined from 13 to 8. The precipitation decreased the burning index to zero and raised the 1000-hour fuels to ten. The fire appeared to be out until July 26 when smoke became visible again. The burning index on July 26 was 61 and the 1000-hour fuels were still at ten.

Other weather data for the period July 6 to August 2 was near normal. The burning pattern on a daily basis exemplified this fact. The fire would appear to be out in the early morning, by noon a column of smoke was visible, and at 1800 hours, the smoke column would decrease. By nightfall, the smoke would be barely visible. This has proved to be a normal burning pattern for the Dubois area and is brought about by the rapid temperature decrease and relative humidity recovery. Although this is a standard condition everywhere, it seems more prevalent on the Targhee National Forest based on past fire behavior experience.

On August 3, the burning index was 65 and the 1000-hour fuels were nine. However, the winds that afternoon were very strong from the south at 25 to 30 mph. These high gradient winds and the low precipitation for the preceding period were the major contributors to the blowup of the Gallagher Peak Fire.

B. Fuel Conditions:

The fuel conditions at the point of origin and in the immediate vicinity of the fire were classified as low rate of spread and low resistance to control. Fuels consisted of live scattered limber pine with dead standing scattered limber pine, light grass groundfuels, and scattered down dead woody material. The fire origin was classified as being in fuel model H. However, no fuel model adequately describes the fuels at the origin of the Gallagher Peak Fire.

Upslope from the fire origin there was essentially no fuels as the origin was on the upper edge of timber line. Small scattered grass tufts, lichens, and rocks are the predominant ground fuels. There are no aerial fuels on this part of the slope.

Downslope and to the south of the fire origin, the fuels consisted of scattered Douglas fir and juniper timber, scattered mountain mahogany, grass, and scattered down dead woody material.

Downslope and to the north, the fuel situation was similar to that at the fire origin, but grading into heavier Douglas fir timber.

Downslope and to the east, the fuels consisted of moderately thick Douglas fir with scattered down dead woody material and a light cover of pine grass and other herbaccous vegetation. Fuel model H adequately describes this area.

The entire area burned in the Gallagher Peak Fire encompassed a wide variety of fuel types and fuel conditions. The fire burned from below lower timber line in grass sagebrush areas covering thousands of acres and above timber line in grass low brush fuels. Midslope areas on north facing slopes consisted of thick stands of Douglas fir of all age classes with varying amounts of ground fuel, depending on fire history. Some of these stands were entirely destroyed, others had the ground fuels consumed, and others were not burned at all.

C. Topographic Conditions:

The fire started at the 9400 foot elevation on an east aspect with a slope of 55 to 60 percent, approximately 300 feet north of the ridge between Gallagher Canyon and a tributary of Blue Canyon. Topography into Gallagher Canyon to the south is 80 to 100 percent. The slope into Blue Canyon averages 60 to 70 percent. The ridge between the two canyons and to the east of the fire origin averaged 45 to 50 percent.

The topography over the entire Gallagher Peak Fire area is extremely varied. Almost every slope percent and topographic feature is represented.

D. Detection:

1. Who discovered the fire?

The initial fire report to the Forest dispatcher was at 1630 hours on July 6, 1979, by George Trinkle, a BLM employee in a BLM fire

reconnaissance aircraft. The BLM was flying in the area looking for fires which may have been generated from the lightning storm that same day. A great deal of BLM land surrounds National Forest land in that area of the county.

2. Did it meet standards?

The policy on the Targhee National Forest is to fly areas following lightning storms either the same day or in the case of night lightning, the following day. In the case of the Gallagher Peak Fire, the lightning storm passed through the area within hours the same afternoon as detected by the BLM air patrol at 1630 hours.

The fire was flown and observed on July 7 at 1136 hours by John Maupin, Targhee National Forest Fuels and Fire Management Specialist.

3. Visibility at time of discovery. Visibility was excellent.

4. Was the detection system adequate to meet discovery time standards?

Yes. If the BLM had not flown the area immediately after the lightning storm, the Forest Service would have initiated a detection flight.

5. What would have been necessary to obtain faster discovery?

Discovery could only have been faster if a lookout was located in the immediate area. The frequency of fire starts does not justify a lookout in this area.

E. Communication: Was it in accordance with standards?

The BLM air patrol immediately radioed the detection of the fire to their dispatcher in Idaho Falls. The BLM dispatcher immediately telephoned the information to the Forest dispatcher. The reporting was prompt and complete.

F. Dispatching:

1. Did the dispatcher obtain all necessary information from the detector for dispatching action?

Yes. As stated above, all information passed from the BLM to the Forest dispatcher was accurate, clear, and complete. The only criticism that could be made is that the detector underestimated the potential of the fire and estimated it would not exceed ten acres.

2. Did dispatcher correlate the detector information with danger rating, fuel types, topography, and hour control requirements to justify the degree of initial attack strength sent to the fire?

The detector information indicated that the location of the fire was within the High Country Fire Management Area. When asked what the potential of the fire was, the detector responded that if no suppression action was taken, it would not exceed ten acres.

The location and potential of the fire indicated that no suppression action needed to be taken because of the guidelines in the High Country Fire Management Area.

G. Statistical and Graphic Records:

1. Number of fires on Ranger District by man-caused and lightning, size classes, extra period, and total area burned. Show maximum number of fires by days on high occurrence days. These records to be for the season and compared with previous years.

Prior to July 6, 1979, the Dubois Ranger District recorded two lightning fires and no man-caused fires. No detailed chart has been prepared to show previous fire history on the Dubois Ranger District prior to July 6 or August 3. This is because the fire occurrence was so light that important information could be derived, especially in view of the fact that the previous High Country Fires were not covered by fire management planning.

2. Completed 5100-29, Individual Fire Report.

See Appendix, Item 3.

3. Display maps showing fuel models, damage classes, hour control zones, transportation system, and communication points.

The Gallagher Peak Fire was in damage class two and the 3 hour control zone. The transportation system is very limited, with jeep roads in the bottoms of most canyons that owe their existence to four-wheel drives creating the roads by pushing farther into the canyons. The only maintained road is the Crooked Creek Road, which runs north from the junction of Highway 22 to within two miles of the Forest boundary.

The closest point of telephone communication is at a ranch house in the bottom of Crooked Creek. The Dubois Ranger District is the closest fixed point radio communications.

4. Map of fire showing area burned by periods.

See Appendix, Item 4.

5. Manpower buildup chart by burning period.

	Aug 4	Aug 5	Aug 6	Aug 7 (Releases begun-Max)
Firefighters	Min 14 Max 45	100	170	170
Overhead on Line	Min 4 Max 12	15	15	15
No. Other Personnel	Min 0 Max 10	15	15	15

	Aug 4	Aug 5	Aug 6	Aug 7
No. Tractors and Tankers	Min 3 Max 12	12	12	12
No. Retardant Drops	8	8	5	0

This chart only shows manning from August 4 through control on August 7. Previous to August 4, the decision was made not to man the fire.

6. Status and location of District initial attack forces on the day fire started and if manning was in accordance with manning and specific action guide requirements.

As stated previously, the fire origin was well within the High Country Fire Management Area and was not manned until August 4.

7. Weather on day of discovery.

The weather on the date of origin had no bearing on the eventual outcome on the Gallagher Peak Fire.

8. Weather forecasts and actual fire danger rating for subsequent periods.

The weather forecast narratives are in the Appendix, Item 5. Fire weather forecasts were not taken specifically for Gallagher Peak until August 3. The forecasts prior to that date would lend little insight to what occurred.

The weather forecast and actual fire danger ratings are listed in Item 2 of the Appendix.

II. PREVENTION ACTION

The Gallagher Peak Fire was lightning caused and none of the requested information is applicable.

III. FIRST PHASE - INITIAL ATTACK

A. Was location and behavior of the fire adequately described?

Yes. Previous to initial attack at 2100 on August 3, fire was observed and studied by aerial flight at 1730 by the fire dispatcher and District Ranger.

B. Are report and travel time adequate?

Report and travel time were adequate after determination to man the fire.

C. Were initial attack forces adequate, considering fuels, weather, topography, and values involved?

During the night of August 3 and during the first hours of flight observations on the morning of August 4, the initial attack forces appeared to be adequate.

D. Were initial attack forces dispatched from nearest available source?

Initial attack forces were dispatched from the two nearest District Ranger Stations and from the nearest BLM headquarters.

E. Were initial attack forces well trained?

The Forest Service initial attack man was red carded as a crew boss trainee and was an experienced fire fighter; the BLM leader was red carded as a division boss.

F. Was equipment of the kind and quantity needed, and was it maintained to a satisfactory standard? Did initial attack forces have communications?

Initial attack equipment included well maintained and operating radios, two 200-gallon slip-on tankers, and one 500-gallon tanker. This equipment was considered to be appropriate and adequate at the time.

G. Specifically, why was initial attack unsuccessful? Was there detection failure, equipment failure, or personnel failure, such as inadequate training as reflected in plan of attack, or were presuppression plans inadequate?

Initial attack forces were inadequate to stop the fire in its entirety. The action was only to keep the fire off of private land in the bottom of chandler Canyon and to observe the fire's progress further upslope. The initial attack view was not given the mission to control the fire on the night of August 3.

H. What should have been done to control the fire promptly?

The manning, efforts, and intent on the morning of August 4 would have had to be beyond what was then assigned. The intent on the morning of August 4 was to herd fire from the bottom - not to contain any more of the fire.

In hindsight, if the fire was to be controlled promptly on the night of August 3 and early in the morning of August 4, it would have been necessary to order two tractors to construct a fireline up Blue Canyon and 40 men to burn out. It is doubtful, however, if even this would have stopped the fire from blowing out in the head of Blue Canyon during the afternoon of August 4.

IV. SECOND PHASE - REORGANIZATION TO CONTROL FIRE BY 1000 FOLLOWING DAY:

A. Was an experienced fire boss assigned to the fire immediately?

No. During the night of August 3 at about 2200, red carded Fire Boss III, Tony Varilone, went to the fire, remained on fire until about 0800 on August 4, then returned to the Ranger Station to rest. At that time, other than a red carded BLM division boss, the Forest Service fire boss was crew boss rated, Scott Bates. Scott Bates was at one time previously rated by BLM for sector boss and fire boss III.

A replacement Fire Boss III, Fred Judd, was ordered at 0907 by aerial observers, Del Marsolek and District Ranger Don Owen. Later that day, at 1630, Fire Boss II , Andy Finn, was ordered. He arrived at 1930.

B. Did the dispatcher anticipate needs of the fire boss and line up the necessary overhead, firefighters, and equipment in readiness for orders from the fire boss?

Needs were anticipated by aerial patrol and firmed up with Forest fire dispatcher prior to orders or requests from a fire boss. These needs were anticipated by the aerial patrol at about 1030 on August 4. It was determined at that time by the Forest fire staffman and District Ranger that herding this fire would require a major project suppression effort beyond that formerly considered.

C. After arrival, did the fire boss size up the situation adequately?

After arrival, Fire Boss Fred Judd flew the fire with the Forest fire staffman to analyze the fire situation. The winds which materialized on the afternoon of August 4 were not anticipated. Although the forecast did predict high winds, it was very conservative in comparison to actual winds.

1. Did his plans adequately reflect the effects of weather, topography, fuels, accessibility, and quality; number of overhead and firefighters available; and types and quantities of equipment?

The analysis agreed upon at the time was that the three crews which had been ordered would be sufficient to herd the fire at the lower elevations to keep it at higher elevations. This later proved to be insufficient.

2. Did he estimate size of fire by 1000 next day? When was this estimate made and by whom? Was a record made of this?

The estimate of the future fire size and spread was made by Del Marsolek during this period. The fire size within the High Country Fire Management Area was at this time still considered to be immaterial. No written record was made of the fire size.

3. Did he estimate manpower and equipment needs to control by 1000 next day? How was this estimate made and by whom? Was a record made?

The decision through August 4 was to not allow the fire to spread uncontrolled through lower country, private land, improvements, and livestock. The fire was to be allowed to spread and burn throughout the higher elevations.

4. Were his plans for suppressing the fire based on good scouting information?

Fire was scouted consistently by aerial patrol throughout August 4; for about 9 to 10 hours.

5. Did the fire boss set up a sound, efficient, and well balanced organization to control the fire? Was it done promptly?

The fire overhead organization and about 30 firefighters were forming at the fire line at early to mid-afternoon with the three ordered organized crews arriving about 1700. This organization was considered sufficient to reach objectives set out above in No. 3.

6. Were local fire weather forecasts obtained? Were they adequate and were they used effectively?

Local fire weather information and forecasts were adequate. Severe conditions and high-velocity winds were forecast and prevailed, determining fire behavior for remainder of the day.

7. Did he establish camp locations and size? When were they established?

The first selected site for camp was made on August 4 at 1500 hours and was soon far behind the advancing fire front. A permanent camp site a Warm Springs was then selected on August 4 at 1900 hours and proved to be an extremely suitable location.

8. Did he time operations adequately? Plans ready - overhead briefed? What time did night crews reach the line?

Andy Finn, red carded Fire Boss II, flew and analyzed the fire situation with Del Marsolek and also planned the back burning strategy to stop fire advance in lower country by night back-burning. This strategy was promptly relayed by the fire boss to the plans chief and line boss in time for prompt assignment of all crews for night back-burning.

9. Were his accomplishments satisfactory? Was line completed and burned out?

All agreed back-burning and line construction was completed that night. Accomplishments fulfilled all anticipations.

10. Did he adequately apply safety measures?

Yes.

11. Did the fire boss adequately consider firefighting costs and values?

Yes. Intent at this time was to stop fire spread where fire could not damage private property and livestock.

12. Did he establish early liaison with cooperating agencies involved in suppression action? Were joint responsibilities defined? How effective was the coordination?

Coordination with BLM was outstanding at all times since initial attack on the night of August 3.

D. Did the dispatcher furnish overhead, equipment, manpower, and facilitating gear requested by the fire boss within time limits?

Dispatching was exceptionally well done.

E. Did the man selected to serve as fire boss prove competent and fully capable of redeeming his responsibilities? If not, wherein could he have done better?

Fire boss assignments by Varilone, Judd, and Finn were handled capably.

F. What mistakes were made? Mistakes in judgement? Mistakes that should not have been made if all factors had been evaluated?

Fire behavior consistently exceeded all intensity expectations. Fire escape early on the morning of August 4, convection column leaning over the fire line later on August 4, extent of back-burning needed on night of August 4, and rapid spread on August 5 beyond back-burned areas were all examples of extreme fire behavior.

G. Specifically, why did the fire boss fail to control the fire during the first burning period?

There was no intent to control the fire not only on August 4 but also on August 5. Again, the intent was to prevent fire spread through lower range country and to protect private property and livestock.

V. THIRD PHASE - MAJOR CONTROL AND ORGANIZATIONAL PROBLEMS:

A. Calculations of probable behavior and location of fire at successive time intervals.

B. Calculation of needs for firefighting based on above estimates.

On the night of August 4, calculations of probability were not recorded by Plans Chief Ned Pence because at that time, there were no plans to control the fire. On August 5, when winds exceeded 40 mph and caused fire to flank the constructed lines, a meeting was arranged at 1800 at Dubois Ranger District between Fire Boss Andy Finn, Plans Chief Ned Pence, District Ranger

Don Owne, Fire Staffman Del Marsolek, and Acting Forest Supervisor Dick Hahn to discuss the fire situation, future plans, and projected needs. The situation was then discussed by phone with Regional Office personnel. A Class I Overhead Team was ordered at 2000 and the fire suppression plans were changed upon instructions from Dick Montague, Director, Aviation and Fire Management, Region 4, to put out the fire. Calculation of probabilities discussed at the meeting indicated unanimous expectation that the fire front, on August 6, could reach Weber Creek and other portions of Medicine Lodge Drainage.

Based on these agreed upon expectations, four additional crews were also ordered plus six sector bosses and other overhead, supplies, and equipment.

The Class I Overhead Team arrived at Dubois on August 6 and at the fire camp at 1200, overlapping with the replaced overhead team. The four additional crews arrived at 1400.

C. Organization and distribution of overhead, manpower, and equipment at successive time intervals by sectors, divisions, etc.:

From the time that the Class I Overhead Team took over the fire, the weather conditions and fire behavior changed to such a degree that the fire no longer spread to significant degrees on any portion of the fire except through the saddle at head of Nicholia and Cooked Creek into Birch Creek Drainage, but no farther. The manpower was distributed with full intent to stop the spread of fire, burn out fuels within lines, and mopup fire to secure the fire from future possible spreads. It was also intended to put the fire out, but this happened chiefly due to heavy rains during mopup which began on August 9 and continued for several days.

D. Mobilization of forces. Was it sufficient as to strength timing, supervisory personnel, and equipment?

Mobilization of forces proved to be insufficient during the period from the morning of August 4 through August 5. Beginning on August 6, forces were considered sufficient.

E. How was scouting done? Was it adequate and efficient?

Scouting was conducted on August 4 and 5 by nearly constant fixed-wing aircraft observation. Beginning on the evening of August 4, a helicopter was added. Ground scouts were assigned on August 5. Scouting was adequate and efficient.

F. Fire camps - location and adequacy. Close to the fireline?

Fire camp location at Warm Springs was excellent.

G. Accomplishments by various methods of control for each successive period, line constructed and held, and line lost and reasons.

On August 4 and 5, constructed lines were lost by high convection columns and intense fire behavior resulting from high velocity winds exceeding 40 mph. Beginning August 6, lines were held as described above.

H. Reasons why plan of attack failed for each successive burning period, if this happened.

Explained above.

I. Effectiveness of labor. Did the morning crews get on the line by daylight and night crews before dark? Were they adequately supervised and directed? Was the 16-hour limitation exceeded (FSM 5132.1--5)? Was production adequate?

No significant problems in assigning crews. Some of the crew performances were extremely good.

J. Effectiveness of specialized equipment and skill of operators. Was production adequate?

We limited the use of tractors only to instances where fire spread would cause concern for livestock and private property. Production was adequate.

K. Adequacy of mopup, patrol operations, and demobilization.

Accomplishments during mopup, patrol, and demobilization were excellent.

L. Were safety measures adequately applied? Number of first aid cases, medical aid cases, and lost time accidents.

Safety officers were ordered early on August 4. Two safety officers were assigned. One EMT was assigned at fire camp. No lost time accidents occurred. One crew member with previous injury reported to doctor, but was returned to fire camp.

VI. LINE OFFICER PARTICIPATION:

A. Was he or his representative available for consultation?

Yes.

B. Did he assist fire boss in major decisions?

Yes.

C. Did he visit line, camps, airports, etc.?

Yes.

D. Did he tie up communication lines with nonfire business?

No.

E. Was he interested in personnel problems?

Yes.

F. Did he attend overhead meetings, meetings between Forest Service and adjacent agencies?

Yes. The District Ranger was constantly involved and served as resource advisor. Dick Hahn served as Acting Forest Supervisor in necessary decision-making on August 4 through August 6. The Forest Supervisor personally contacted Class I Fire Overhead Team on August 7, including fire scouting.

G. Did he currently keep his superior posted on fire status?

On August 5, the Acting Forest Supervisor discussed the fire situation with responsible Regional personnel. Prior to this, Dale Matlack, Acting Regional Coordinator, was kept informed.

H. What was his involvement with cooperators, news media, and public?

The news media was informed not only of the fire but escorted to the fire by two assigned FIO's. The District Ranger kept in constant touch with cooperators and local public.

VII. PERFORMANCE OF OVERHEAD:

A. Were overhead qualified for assignments?

In the early morning hours of August 4, when it was not known nor intended that suppression may be necessary, the fire boss assignment was left to Scott Bates, crew boss rated, with a division boss rated BLM person in charge of other portions of the fire.

On the evening of August 4, two individuals who were dispatched as truck drivers to the fire camp, were assigned as tractor bosses. These individuals were not currently red carded. Each had been previously red carded for tractor boss positions. One individual, who was assigned as an FIO, was not red carded for that position. On August 4, when individuals for positions on the Forest overhead team were decided upon by the Forest fire staffman, administrative officer, and fire dispatcher, some were selected outside of current red card ratings based on personal knowledge of individuals and their capabilities and experience.

B. Were overhead rated before release?

Yes.

C. Were teams kept intact?

Yes.

D. Were there any indications of need for training? What were they?

To our knowledge, the team and individuals all performed well.

E. Was communication used efficiently?

Yes.

F. Was action taken on cases of personnel deficiencies?

No personnel deficiencies.

G. Was past training reflected in performance? How?

Performance indicated worthwhile results from past training.

H. Did crew boss stay with crew during off-shift periods?

Yes.

I. Did overhead control specific vehicles for personal use?

Yes.

VIII. EFFECT OF SUPPRESSION ACTION ON ENVIRONMENT:

A. Was a resource advisor designated and available for consultation on all aspects of environmental impacts of suppression operations?

Yes. District Ranger was resource advisor and constantly available.

B. Were effects of suppression on soils, vegetation, wildlife habitat, and watershed considered?

Yes. The extent of use of tractors was well discussed in advance with fire boss, plans chief, District Ranger, and Acting Forest Supervisor.

C. Were possible environmental damages discussed at strategy meetings?

Same as above.

D. Were fire lines constructed of reasonable width in locations that would cause minimum erosion?

Tractor lines were constructed to prevent the fire from spreading towards livestock and private property, and were of minimum width. These lines were water barred.

E. Were snags felled into streams?

Streams were cleaned of fire debris for rehabilitation.

F. Were camps, heliports, helispots, and other facilities located where they would have least effect on the environment?

No problems.

G. What effect on environment was caused by heavy equipment? Were post fire erosion control measures adequate?

Tractor lines were cross-ditched and reseeded by helicopter.

H. Were tractors restricted?

Shown above.

I. Were dust problems prevented on roads and camp areas?

Water truck was assigned.

IX. FINANCIAL MANAGEMENT OF FIRE OPERATION:

A. Summary of costs.

		FOREST SERVICE	OTHER (ESTIMATE)	TOTAL	PERCENT OF TOTAL FIRE COSTS
(1)	Base pay of Regular Employees	$ 40,320		$ 40,320	13%
(2)	Overtime pay	100,400		100,400	33%
(3)	Wages at FFF rates	19,500		19,500	6%
(4)	Travel	7,500		7,500	2%
(5)	Transportation	19,400		19,400	6%
(6)	Forest Service Equipment Rental	2,000		2,000	1%
(7)	Other Equipment Rental	24,000		24,000	8%
(8)	Food	25,000		25,000	9%
(9)	Equipment (Include Losses)	4,000		4,000	1%
(10)	Aircraft	62,000		62,000	21%
(11)	TOTAL:	$304,120	0	$304,120	100%

B. Aircraft costs and use. (Included in Item A, but shown below separately.)

1.	Lead Planes -	No. 1	Hrs. 3	Cost $ 330
2.	Reconnaissance -	No. 3	Hrs. 49	Cost $ 2,730
3.	Air Tankers -	No. 3	Hrs.	Cost $ 44,700
	Retardant Dropped -	Gallons 44,700		
4.	Helicopters -	Numbers used 2		
	Delivery of Personnel -	No. Persons 198	Hrs. 29	Cost $ 7,685
	Delivery of Cargo -	Tons 3.7	Hrs. 23	Cost $ 6,118
	Retardant Drops -	Gallons 0	Hrs. 0	Cost $ 0
5.	Other Aircraft Use -			
	Delivery of Personnel -	No. Persons 4	Hrs. 4	Cost $ 290
	Delivery of Cargo -	Tons 0	Hrs. 0	Cost $ 0
	Delivery of Paracargo -	Tons 0	Hrs. 0	Cost $ 0

GRAND TOTAL AIRCRAFT - $61,853

C. Shift length by date.

		Maximum	Average
1.	Command	24 hrs.	14 hrs.
2.	Plans	24 hrs.	14 hrs.
3.	Service	24 hrs.	14 hrs.
4.	Finance	12 hrs.	10 hrs.
5.	Line Overhead	24 hrs.	14 hrs.
6.	Organized Crews	24 hrs.	14 hrs.
7.	Pickup Crews	---	---

D. Procurement.

1. Was all equipment purchased needed and used on the fire?

All equipment purchased was used on the fire.

2. Were equipment rental agreements prepared prior to equipment use?

All equipment agreements were caught up with as equipment came to the fire on August 4.

3. Was there a shortage or excess amount of food purchased?

No excess.

4. Was equipment shipped the cheapest way within time limits?

Yes.

5. Were local business establishments given equitable consideration on government purchases?

Yes.

E. Timekeeping and recordkeeping. Were timekeeping and recordkeeping adequate? Commissary? Compensation? Equipment use? Claims? Orders? Receipts? Property accountability?

1. Time keeping and recordkeeping were good.

2. Commissary - no problems.

3. Claims -

(a) Several personal items later found.

(b) Rancher's claim for burned fence now being handled in the Regional Office.

(c) Slight damage to one National Guard vehicle but yet no claim received from the National Guard.

4. Property accountability was good - no known losses of property.

APPENDIX

		Item No.
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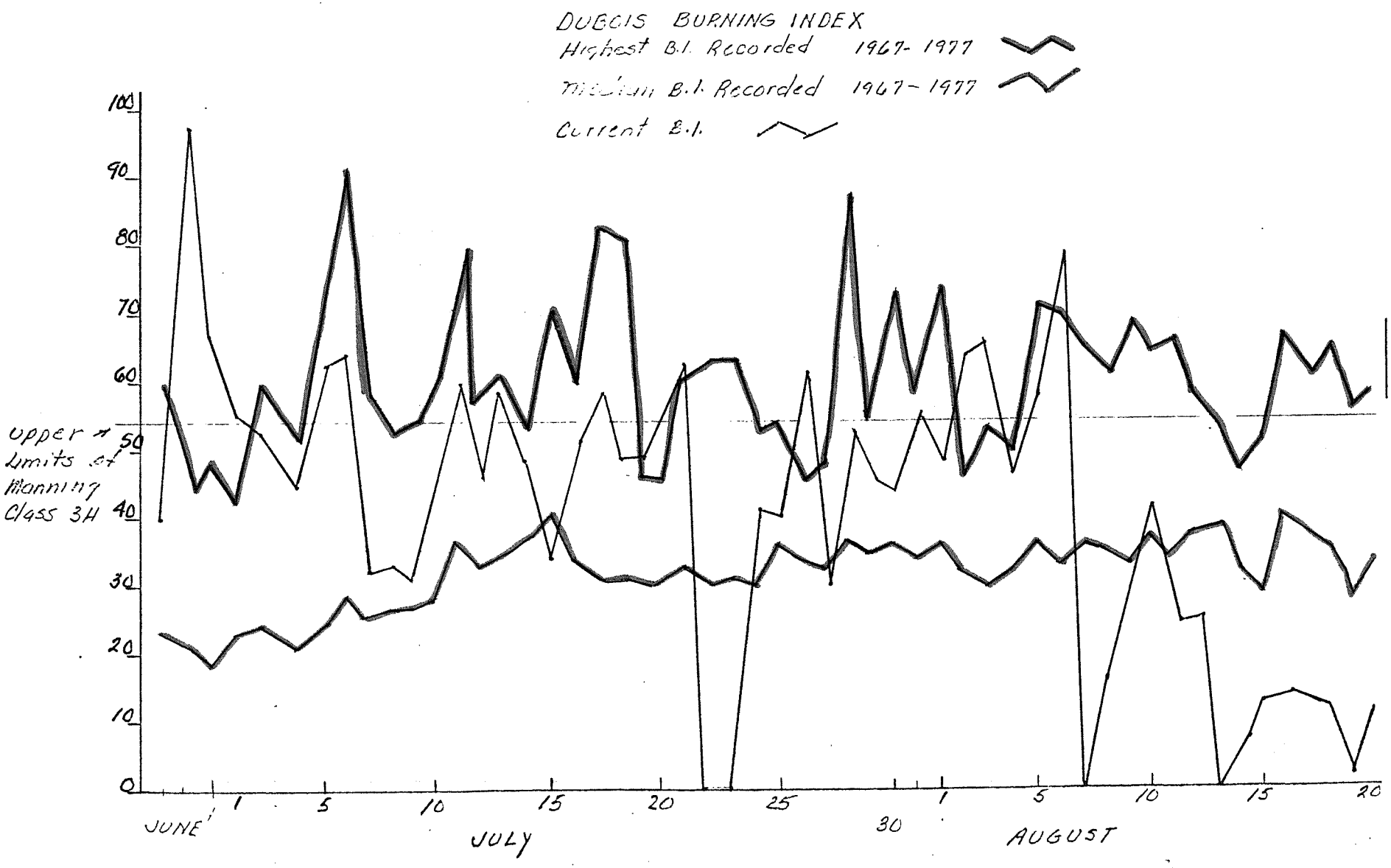
ITEM 1a


DUBOIS BURNING INDEX
Highest B.I. Recorded 1967-1977
Minimum B.I. Recorded 1967-1977
Current B.I.
100
90
80
70
60
50
40
30
20
10
0
upper limits of Manning Class 3H
1
5
10
15
20
25
30
1
5
10
15
20
JUNE
JULY
AUGUST

DUBOIS ENERGY RELEASE COMPONENT
Highest E.R.C. Recorded 1964 - 1977
Median E.R.C. Recorded 1964 - 1977
Current E.R.C 1979
90 Percentile E.R.C
30
25
20
15
10
5
0
1
5
10
15
20
25
30
1
5
10
15
JUNE
July
AUGUST
ITEM 1b

ITEM 2 - Weather Forecast

FUEL	1000 T/L	DAY	IC	SC	EC	BI	MC	R
T	11	7/2	40	51	9	50	3	Hi
H	11	7/2	43	5	29	29		
T	11	7/3	41	36	13	50	3	Hi
H	11	7/3	46	4	33	27		
T	10	7/4	33	30	11	43	3	Hi
H	10	7/4	37	3	31	25		
T	10	7/5	58	54	14	64	4	
H	10	7/5	62	5	35	32		
T	10	7/6	61	55	14	65	4	
H	10	7/6	65	5	35	33		
T	10	7/7	23	16	10	31	3	Lo
H	10	7/7	31	2	31	21		
T	10	7/8	26	14	13	32	3	Lo
H	10	7/8	36	2	34	22		
T	10	7/9	26	9	16	30	3	Lo
H	10	7/9	41	2	37	22		
T	9	7/10	69	71	16	77	5	Ext
H	9	7/10	73	7	39	39		
T	9	7/11	46	45	14	58	4	Hi
H	9	7/11	50	4	38			
T	9	7/12	32	29	12	45	3	Hi
H	9	7/12	37	3	36	27		
T	9	7/13	42	55	12	59	4	
H	9	7/13	44	5	35	32		
T	9	7/14	32	33	11	46	3	Hi
H	9	7/14	37	4	33	27		
T	9	7/15	28	12	16	34	3	Lo
H	9	7/15	42	2	38	23		
T	9	7/16	44	28	16	50	3	Hi
H	9	7/16	54	3	39	29		
T	9	7/17	52	38	17	58	4	Hi
H	9	7/17	61	4	40	32		
T	8	7/18	43	24	17	48	3	Hi
H	8	7/18	55	3	40	29		
T	8	7/19	46	38	16	56	4	
H	8	7/19	53	4	40	32		

ITEM 2 - Weather Forecast

FUEL	1000 T/L	Day	IC	SC	EC	BI	MC	R
T	8	7/20	46	38	16	56	4	
H	8	7/20	53	4	40	32		
T	8	7/21	53	45	16	62	4	
H	8	7/21	60	5	41	34		
T	9	7/22	0	0	0	0		.39 precip.
H	9	7/22	0	0	0	0		
T	10	7/23	3	4	0	0	1	.13 precip.
H	10	7/23	7	2	13	13		
T	10	7/24	31	36	7	39	3	Lo
H	10	7/24	35	4	24	24		
T	10	7/25	30	26	10	39	3	Lo
H	10	7/25	36	3	27	23		
T	10	7/26	50	62	11	61	4	
H	10	7/26	52	6	30	32		
T	10	7/27	20	15	9	29	3	Lo
H	10	7/27	27	2	30	21		
T	10	7/28	43	46	11	53	3	Hi
H	10	7/28	48	5	31	29		
T	10	7/29	33	24	13	42	3	Hi
H	10	7/29	41	3	33	26		
T	9	7/30	34	25	13	43	3	Hi
H	9	7/30	42	3	34	26		
T	9	7/31	47	40	14	56	4	Hi
H	9	7/31	54	4	36	31		
T	9	8/1	41	26	15	48	3	Hi
H	9	8/1	51	3	38	28		
T	9	8/2	55	48	16	63	4	
H	9	8/2	62	5	40	35		
T	9	8/3	56	49	16	65	4	Hi
H	9	8/3	64	5	50	35		

USDA FOREST SERVICE

INDIVIDUAL FIRE REPORT

FIRE NAME: Gallagher Peak

RANGER FIRE NO.: 3

MANDATORY ITEMS: CLASS A 1-33 CLASS B 1-34 CLASS C to G 1-44

REGION FIRE NO.:

1. State [2-3]	2. County	3. Forest [4-5]	4. District [6-7]	5. Supervisor No. [8-10]
Idaho 16	Clark & Lemhi	Targhee 15	01	703

6. Fire started on National Forest [11]	7. Month [12]	Day [13-14]	Year [15]	8. Watershed No. [16-23]	9. Size Class [24]
1	July 7	6	06 1979 9	17040215	37230 G

10. Statistical Cause [25]	11. General Cause [26]	12. Specific Cause [27-28]	13. Class of people [29]
Lightning 1	Lightning 0	Lightning 01	0

	DATE Mo. Day	HOUR	ELAPSED TIME Hours [30-31]	Min. [34-35]
14. Origin	7 6	1615	16	
15. Discovered (Item 15 minus 14)	7 6	1630	00	15
16. First attack (Item 16 minus 15)	8 3	2330	99 [36-37]	99 [38-39]
17. First Reinforcement (Item 17 minus 16)	8 4	0030	1 [40]	00 [41-42]
18. Fire Controlled Item 18 minus 16	8 12	1800	211 [43-45]	
19. Fire Out	8 20	1800		

20. Discovered by (Class) | Location: B.L.M. aircraft / OVER FIRE [46]: 8

21. First Attack by | (Kind): Pumper | (Amount): 3 men [47-48]: 33

22. First Reinforcements (Kind) | (Amount): B.L.M. tanker 7 men [49-50]: 36

23. Maximum No. Personnel [51-54]: 0301

24. Value Class at Origin [55]: 1

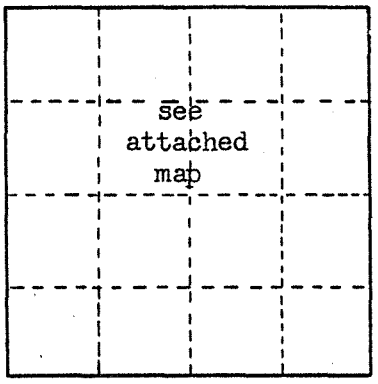
25. Fire danger: B.I. 65 Fuel Model "T" [56-57]: 65

26. Special Weather feature: 30 M.P.H. "G" [58]: 9

27. Slope: 55%	[59] 5
28. Aspect: East	[60] 1
29. Elevation: 9400	[61] 9
30. Cover type - vicinity of origin	[62-63] 10
31. Fuel type - vicinity of origin: LL	[64-69] 000011
32. Cost Class: $487,000	[70] 6

33. Location

Scale: _____ inches = 1 mile



Location description

a. Township	[71-74] 010N
b. Range	[75-78] 031E
c. Section	[79-80] 26
d. Meridian: Boise	
Alternate description for lands not covered by GLO survey	
e. Latitude	[72-75] 4915
f. Longitude	[76-80] 11245

34. Acres burned	NATIONAL FOREST LANDS	OTHER LANDS INSIDE
a. Noncommercial forest	[11-16] 002520	[17-21] 00000
b. Commercial forest (1) Natural	[22-27] 000000	[28-32] 00000
(2) Plantation	[33-37] 00000	[38-42] 00000
c. Nonforest	[43-48] 034090	[49-53] 00620
35. Volume of timber destroyed (MBM)	[54-59] 06000	[60-64] 00000

36. Total area when controlled	[65-70] 037230
37. Fuel type prevailing on burned area	[71-76] 000031
38. Topography (vicinity of origin)	[77] 9
39. Highest Fire Danger	[78-79] 78
40. Critical Weather Feature: 30 m.p.h. "G"	[80] 9

Remarks (Continue on reverse if required)

Targhee N.F. High Country Fire Management Area

The attached narrative is composed of three different reports that document the sequence of events of the fire up to the arrival of the R-2 Overhead Team. Their daily plans which are available document the events after takeover.

Submitted (Signature)	Date	Approved (Signature)	Date
Nathan A. Vanlone	9/17/79	Everett Mathis (Acting) Forest S	12-17-79

Value of Resources Damaged or Destroyed (Code in hundreds of dollars)		N.F. LANDS (1)		OTHER LANDS (2) INSIDE FS PROTECTION	
		Dollars	Code	Dollars	Code
41. Timber		12000	[11-15] 00120	0	[16-20] 00000
42. Other (non-timber)					
a. Watershed		3000	[21-25] 00030	0	[26-29] 0000
b. Recreation			[30-34] 00000	0	[35-38] 0000
c. Range & Wildlife		30000		0	
d. Improvements		1000		2000	
e. Other non-timber		0			
f. Total non-timber (a to e incl.)		34000	[39-43] 00340	2000	[44-48] 00020
43. GRAND TOTAL (Items 41 and 42f)		46000		2000	
44. Acres burned by Value Class	Value Class		Acres		Acres
	[49] 1		[50-54] 36610		[55-59] 00620
	[60] -		[61-65] -----		[66-70] -----
	[71] -		[72-75] ----		[76-79] ----

GALLAGHER PEAK FIRE
NARRATIVE

The Gallagher Peak Fire was detected on July 6, 1979, at 1630 by a Bureau of Land Management spotter plane. The fire was obviously lightning caused and started at approximately 1615 of the same day. The BLM aerial observer who was Division Boss rated reported the fire immediately to the Forest Dispatcher. The fire was on Gallagher Peak burning in light fuel of down woody material and grass at an elevation of 9,400 feet. The BLM observer estimated that the fire would not exceed 2 acres in size because of location and fuel type. The Forest Dispatcher called the Dubois Ranger District and informed Acting District Ranger Anthony Varilone of the fire. He made the decision to take no suppression action on the fire because of its location within the area covered by the High Country Fire Management Area. This decision was within the intent of the HCFMA Plan.

The fire was flown numerous times after its detection to observe its progress and just because people were interested. The fire would die down at night and during the morning so that at times the smoke was barely visible. In the afternoons a small column was visible. However, at no time was the fire burning on more than 20 acres at any one time. Several escaped fire analysis were made because the fire had escaped the 10 acre prescription spelled out in the HCFMA Plan. All analyses selected the non-suppression alternative because of the low resource value and the benefits to be derived by letting the fire burn at its present level.

On July 22, 1979, the weather station at Dubois received 0.39 inches of rain. This was a general shower and the fire area received as much or more precipitation. Up to this time the fire had burned over a total area of approximately 150 acres and done an excellent job of cleaning up ground fuels.

The BI for this period had averaged in the sixties and the 1000 hour T.L. fuel moisture had gone from 13 to eight. The precipitation decreased the BI to zero and raised the 1000 hour fuels to ten.

The fire appeared to be out from distant observation points until July 26 when three small smokes were observed. The BI had increased to 61 by this time and the 1000 hour fuels were still at ten. The fire again continued its earlier burning pattern and consumed an additional 150 acres until August third.

On this date (August 3) the 1000 hour fuels were at nine and the BI was 65. The winds for that afternoon were very strong from the south at 25 to 30 mph, and gusts up to thirty five. The fire began to develop a strong column in the late afternoon. The District Ranger, Don Owen, and the Forest Dispatcher, Jay Benson, flew the fire at 1730 hours. The fire was burning below the timber at about 7000 feet elevation and they thought it would go out in the grass by night fall.

At 2030 hours the District Fuels Management technician was sent to the fire to make sure it was going out in the grass and sagebrush. The fire was still burning into Blue Canyon to the north and Chandler Canyon to the east. At this point two additional men from the District were sent to help and a pumper crew from the Ashton District was ordered. Two BLM pumper crews were also dispatched. All forces arrived at approximately 0100 hours on August 4, 1979. There was not much that could be done to control the fire in upper Blue Canyon because of the steep rocky terrain and heavy timber. Efforts were concentrated on the lower slopes in the grass-sagebrush to keep the fire off private and BLM land and keep it from spreading in those flashy fuel types. The increased relative humidity and lower temperatures in the night actually stopped the fire at lower elevations in the flashy fuels and caused it to lie down in the timber areas up higher. A band of sheep were discovered in Blue Canyon directly in the path of the fire if it continued to spread. Efforts were initiated to move the sheep.

Early in the morning of August 4 the winds on the fire area again increased to 20 - 30 mph with gusts to 35 mph. An escaped fire analysis was made and it was decided to man the fire because it was out of control and was endangering livestock, private land, and property.

An overhead team composed of Forest personnel was formed and three twenty man crews were ordered. Four tankers - two BLM and two Forest, attempted to hold the fire in Chandler Canyon until the arrival of the team and the three crews. The fire blew out of Chandler Canyon before their arrival.

Retardant planes were ordered to try and stop the fire spread in Crooked Creek in direct and indirect attack. The drops were largely unsuccessful because of the rapid rate of spread in the sagebrush. The helicopter from the Bridger Teton National Forest was brought in for reconnaisance and it was also used to herd cattle to safety.

The current Fire Boss, Tony Varilone, recognizing that the fire was beyond his capabilities requested that he be replaced. Andy Finn arrived to take over at 1800 hours on August fourth.

The available tankers and manpower were used to try and contain the fire south of the Crooked Creek road by burning out. The two tractors which had been ordered and had arrived were used to construct line from Crooked Creek to Chandler Canyon. This action continued into and through the night. By the morning of August 5th these actions were complete except for burning out in the head of Buckhorn Creek a tributary of Nicholia Canyon. They appeared to be successful.

On August 5th all crews were pulled off the fire to rest and the only relatively fresh crew, the two BLM tankers, were put out. The two cats were also pulled off. At about 1400 hours high winds of 40 mph caused the fire to burn out the head of Buckhorn Canyon into the head of Crooked Creek. By 1800 hours the fire size was 20,000 acres. The Fire Boss, Andy Finn, Del Marsolek, Forest Fire Staff and the Ranger, Donis Owen requested a Class I Overhead Team.

The effort on the night of August 5 was to keep the fire from spreading south and east of Crooked Creek with four 20 man crews and two cats.

The fire was moving too fast during the day when winds were strong to put men and equipment on the line.

On August 6th the Class I Team arrived from R-2 and continued with the planned attack. That day the fire burned across Crooked Creek and into the South Fork of Webber Creek and Meyers Creek pushed by strong south winds. Night action consisted of hand lining the east and north flanks.

On August 7th precipitation fell in the amount of 0.08 to 0.10 inches and winds decreased. From August 8th to 11th rain continued to fall. Control lines were completed and mop up progressed.

The Overhead Team turned the fire back to the Forest on August 12th. Mop up and patrol continued until August 20th when the fire was declared out.

OBSERVATIONS AND RECOMMENDATIONS

1. Action on the Gallagher Peak Fire was commensurate with the HCFMA Plan but the extreme weather conditions this season were not calculated into the plan. The plan needs to be fine tuned to recognize and compensate for these weather extremes.

2. Normally this area of the Forest receives frequent and heavy thundershowers in July and August. This weather did not occur this year. Forest personnel were lulled into thinking it would occur simply because it always had done so.

3. The fire should have received suppression action on July 26 after smoke again appeared following the rain. This was not done because the fire behavior previous to the rain was not excessive and more rain was expected as explained in the last point.

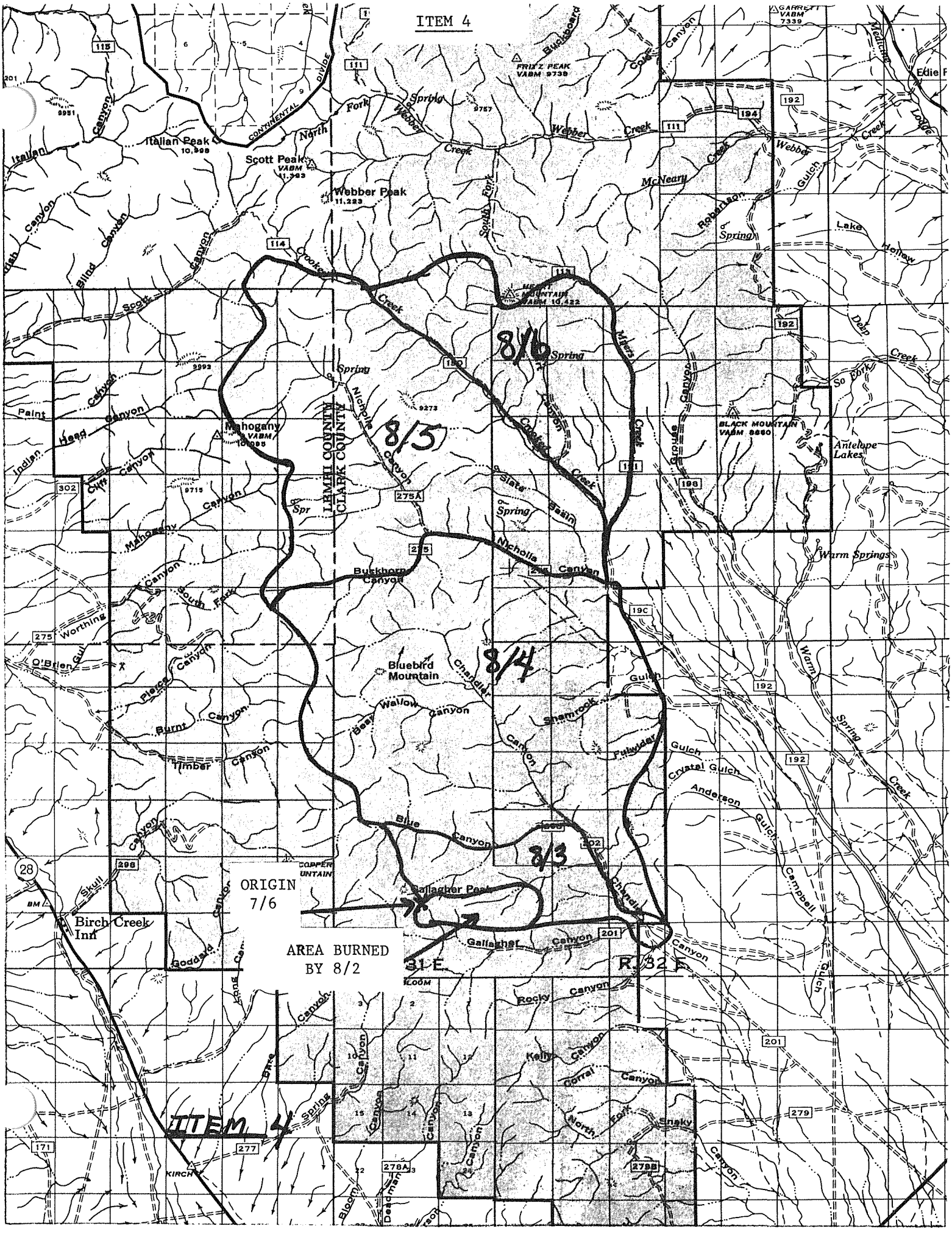
4. The final result of Gallagher Peak Fire has been beneficial to Range and wildlife and only slightly detrimental to watershed. This fire is a natural part of the ecosystem in that area. The timber stands were all 80 to 150 years old and it is obvious that a similar fire burned here in the same manner 100 to 200 years ago.

5. A Class I Overhead Team should have been ordered on August fourth but the numerous other major fires in Idaho at the time made it seem difficult to obtain a team.

6. The tactic of not manning the fire during the day on August 4, 5, and 6 was appropriate and probably saved some lives.

Anthony A. Varilone

ANTHONY A. VARILONE
Forester


ITEM 4
ORIGIN
7/6
AREA BURNED
BY 8/2
8/6
8/5
8/4
8/3
ITEM 4
Italian Peak
10,388
Scott Peak
VABM
11,343
Webber Peak
11,223
Fritz Peak
VABM 9738
Garrett
VABM
7339
Mahogany
VABM
10,095
Bluebird
Mountain
Gallagher Peak
Black Mountain
VABM 8860
Birch Creek
Inn
Lemmel County
Clark County
Continental Divide
Webber Creek
North Fork
South Fork
McNeary Creek
Antelope
Lakes
Warm Springs
Anderson Gulch
Crystal Gulch
Rocky Canyon
Kelly Canyon
Corral Canyon
Snaky
North Fork
Bluebird
Mountain
Gallagher
Canyon
Blue
Canyon
Burnt
Canyon
Timber
Canyon
Buckhorn
Canyon
Nicholia
Canyon
Mahogany
Canyon
Indian
Head
Canyon
Paint
Canyon
Scott
Canyon
Italian
Canyon
Dish
Canyon
Blind
Canyon
Pierce
Canyon
O'Brien
Gulch
Worthing
Canyon
South Fork
Canyon
Cliff
Canyon
Crooked
Creek
Nicholia
Creek
Slate
Basin
Spring
Creek
Deep
Creek
So Fork
Lake
Hollow
Robinson
Spring
Webber
Gulch
Lodge
Creek
Medicine
Edie
Shamrock
Gulch
Pulpwater
Gulch
Spring
Creek
Campbell
Gulch
Rhyndi
Canyon
Skull
Canyon
Goddard
Canyon
Bloom
Deadman
Canyon
Spring
Canyon
Canyon
Canyon

IV. KEY REGIONAL DECISIONS/JUDGEMENTS

A. Gallagher Peak Fire.

1. The Forest Supervisor selected a "non-suppression" alternative on each escaped fire analysis, rather than suppression. This decision was based upon what he considered as positive resource benefit from the wildfire. National direction implies that a no-suppression alternative may be considered in the analysis; however, this is contrary to the intent of the policy.

2. The weather conditions on the Gallagher Peak Fire had not been forecasted to the degree that occurred. Twenty-year weather records indicated a much lower "worst condition" and the Fire Management Area Planning indicated the lower "worst condition" would not be threatening to land management objectives. Certainly, people can point out the fact that the 1000-hour fuel moisture readings were critically low and the Palmer Drought Index was also in the critical stage. The majority of the acreage burned (32,400 out of 37,000 acres) was sagebrush and grayed grasslands. This fuel model is impacted more by the 10-and 100-hour fuel moisture indicators which were well within the limits until the rapid change in weather conditions. The 10-hour fuel moisture change is directly related to the daily weather conditions. Experience shows that when fire weather conditions reach the upper 10 percentile, reliability of forecast drops to about a 70 percent accuracy. Especially if the local weather recordings are not taken on site. The actual weather recordings for the area fire weather forecast were taken at two locations many miles away from the fire, but were representative of the area forecast.

3. Forest Class II fire team did not plan for potential containment or control in any of the escaped fire situation analysis.

(a) Also, the fire team underestimated the fire potentials during a draught year. Did not use fire behavior projections.

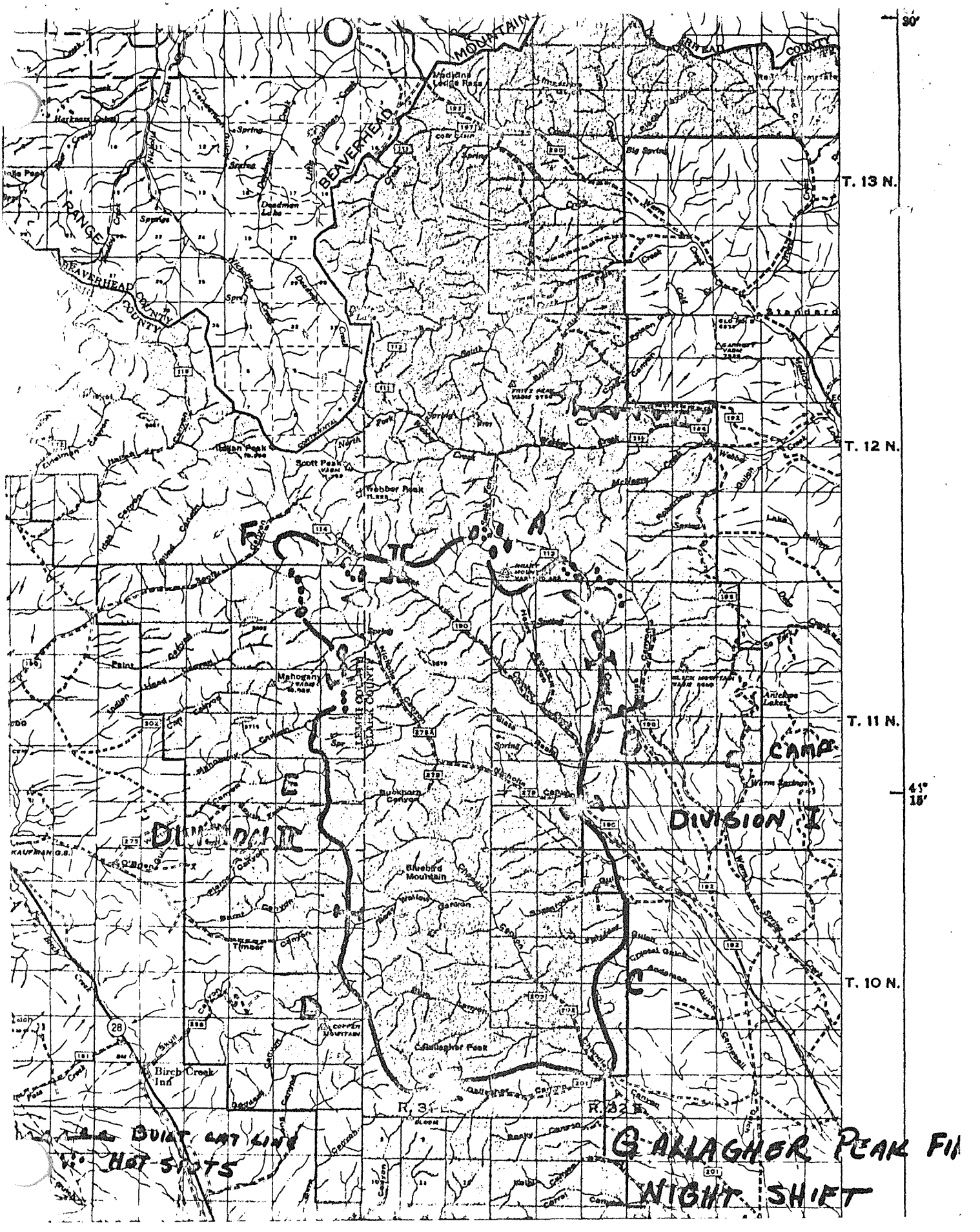
(b) Used personnel knowledge and assessment.

(c) Forest fire behavior specialists were off Forest on other fire assignments.

(d) First real test of their fire management plan prescription. First real test nationally.

4. Regional and national direction on "how to" implement fire management area planning was vague and practically non-existent at the time the Targhee High Country Plan was approved. Region 4 has since distributed a rough draft manual supplement (May 1979) to the field for guidance on future planning areas. This manual supplement had not been formalized to date.

The High Country Plan had not been modified to incorporate the proposed direction.


T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
30'
41° 15'
BEAVERHEAD MOUNTAIN
BEAVERHEAD COUNTY
RANGE
Madison Lodge Pole
Big Spring
Standard
Deadman Lake
Italian Peak
Scott Peak
Webber Peak
McHaney
Anteiope Lakes
Camp
DIVISION I
Mahogany
Bluebird Mountain
Gallagher Peak
Birch Creek Inn
R. 31 E.
R. 32 E.
28
BUILT CAT LINE
HOT SPOTS
GALLAGHER PEAK FI
WIGHT SHIFT

ITEM 5

NATIONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO AUGUST 3, 1979
MORNING FIRE WEATHER FORECAST ISSUED 0930 AM MDT FRIDAY

...RED FLAG WARNING AREAS II AND III THIS AFTERNOON THRU THIS EVENING...

DISCUSSION: RED FLAG WARNINGS ARE NOW POSTED FOR AREAS II AND III FOR THIS AFTERNOON AND THIS EVENING. MARINE AIR SPILLING OVER THE CASCADES HAS INCREASED SURFACE PRESSURE GRADIENTS TODAY AND WITH A BRISK WEST TO SOUTHWESTERLY WINDFLOW ALOFT...GENERALLY WEST TO SOUTHWEST GUSTY WINDS BETWEEN 15 AND 30 MPH WITH SOME HIGHER GUSTS HIGHER RIDGES WILL DEVELOP THIS AFTERNOON AND EVENING. WARM AND DRY CONDITIONS WILL PERSIST OVER THE ENTIRE DISTRICT TODAY AND SATURDAY...EXCEPT A LITTLE COOLER WEST AND NORTH SATURDAY.

AREA I ZONES 411-417
TODAY...SUNNY AND HOT. LOCAL GUSTY AFTERNOON WINDS.
FREE AIR WIND...WEST TO NORTHWEST 10-25 MPH.
TONIGHT...FAIR
SATURDAY: SUNNY AND CONTINUED WARM AND DRY. LOCAL GUSTY AFTERNOON WINDS.
AIR DISPERSAL...EXCELLENT TTRHFLAND SATURDAY...POOR TONIGHT.

AREA II ZONES 408-410 AND 637
TODAY...RED FLAG WARNING GOR GUSTY WINDS 15 TO 30 MPH THIS AFTERNOON AND EVENING WITH SOME HIGHER GUSTS HIGHER RIDGES. SUNNY WARM AND DRY.
FREE AIR WIND...WESTERLY 15 TO 30 MPH.
TONIGHT: FAIR WITH DECREASING WINDS AFTER SUNSET.
SATURDAY: SUNNY AND DRY. LITTLE COOLER WEST/NOT MUCH TEMPERATURE CHANGE EAST.
AIR DISPERSAL: EXCELLENT TODAY POOR TONIGHT AND GOOD SATURDAY

AREA III ZONES 401-407
TODAY: RED FLAG WARNING FOR GUSTY WINDS 15 TO 30 MPH THIS AFTERNOON AND EVENING WITH SOME HIGHER GUSTS HIGHER RIDGES. SUNNY WARM AND DRY.
TONIGHT...FAIR WITH DECREASING WINDS AFTER SUNSET.
SATURDAY: SUNNY AND CONTINUED DRY BUT A LITTLE COOLER.
AIR DISPERSAL...EXCELLENT TODAY...POOR TONIGHT...GOOD SATURDAY

EXTENDED FORECAST FOR SUNDAY THRU TUESDAY: MOSTLY FAIR WITH NEAR NORMAL TEMPERATURES.

EXTENDED OUTLOOK FOR AUG 8 THRU AUG 12...DRY WITH NEAR TO OR ABOVE NORMAL TEMPERATURES.
END BOISE FIRE WEATHER

TO TARGHEE NATIONAL FOREST DISPATCH
FROM BOISE FIRE WEATHER

SPOT WEATHER FORECAST FOR GALLAGHER PEAK FIRE
ISSUED 630 PM MDT FRIDAY AUG 3 79
DISCUSSION. . .LOW PRESSURE IN MONTANA CAUSING STRONG WEST TO SOUTH -WESTERLY WINDS THIS EVENING. WINDS WILL DIMINISH TOWARD MORNING. WEAK HIGH PRESSURE TO BUILD OVER REGION SATURDAY WITH ANOTHER LOW PRESSURE AREA MOVING INTO AREA SUNDAY FOR MORE WINDS SUNDAY.

RED FLAG FOR THIS EVENING WITH WINDS WESTSOUTHWEST 10 TO 15 MPH AND GUSTY BECOMING NORTHWESTERLY DURING NIGHT. WINDS SLOWLY DECREASING LOWER ELEVATIONS BY DARK AND ALL ELEVATIONS BY MORNING. CLEAR AFTER DARK 50 BOTTOM AND 55 TOP.
RELATIVE HUMIDITY. . .MAXIMUM TONIGHT 45 TO 55 PERCENT.

SATURDAY. . .CLEAR AND LITTLE COOLER WITH LESS WIND. MAX TEMP 78. MIN HUMIDITY 18 PERCENT. WINDS WEST TO NORTHWEST 5-10 AM INCREASING TO 10-15 MPH AFTERNOON.

TO TARGHEE NATIONAL FOREST DISPATCHER
FM BOISE FIRE WEATHER

SPOT FORECAST FOR GALLAGHER PEAK MGT FIRE #703
ISSUED 3:30 PM MDT SAT 04 AUG 79
DISCUSSION...HIGH PRESSURE ALOFT WITH HEAT THROUGH AT SURFACE OVER SOUTH CENTRAL IDAHO BECOMING MORE INTENSE. STRONG SOUTHWESTERLY FLOW ALOFT.

TEMPERATURES....MINIMUM TONIGHT 50 TO 55 AT 7700 FT
MAXIMUM SUNDAY 92 TO 97 AT 7700 FT
HUMIDITY.....MAXIMUM TONIGHT 40 TO 45 PCT
MINIMUM SUNDAY AT MAX HEATING 6 TO 10 PCT

WINDS...BRISK SOUTHWEST 13 TO 20 MPH WITH RISK GUSTS NEAR 30 TIL SUNSET. WINDS SLOWLY DECREASING TO 8 TO 13 MPH BETWEEN SUNSET AND MID NIGHT AT UPPER REACHES OF FIRE. WINDS TO BE 4 TO 8 MPH AT THE VERY BOTTOM OF FIRE. WINDS TO INCREASE RAPIDLY FORENOON SUNDAY FROM THE SOUTHWEST WITH GUSTS TO NEAR 30 LIKELY BY MID AFTERNOON.
END

BOISE FIRE WEATHER FORECAST NOW IN AFFIRMS 1558 MDT FG

TARGHEE COPY THANKS

TO TARGHEE NATIONAL FOREST
FM BOISE FIRE WEATHER

SPOT FORECAST FOR GALLAGHER PEAK FIRE
ISSUED 7 AM MDT SUN 05 AUG 79
DISCUSSION...THERMAL THROUGH OVER W IDAHO YESTERDAY HAS PUSHED INTO EAST IDAHO TODAY. WITH LITTLE MOISTURE FROM SOUTH GUSTY AFTERNOON WINDS AND FEW THUNDERSTORMS ARE LIKELY.
TODAY...PARTLY SUNNY, HOT AND DRY BECOMING PARTLY CLOUDY WITH CHANCE OF A THUNDERSTORM AFTERNOON WITH GUSTY WINDS.
MAXIMUM TEMPERATURE TODAY. 85...MINIMUM HUMIDITY 12 PERCENT.
WINDS SOUTH TO SOUTHWEST 8-12 AM INCREASING TO 12-18 BY NOON. WINDS BECOMING MORE WESTERLY AND GUSTY MID AFTERNOON TIL EVENING.

TONIGHT...CLEARING AFTER SUNSET WITH GOOD TEMPERATURE AND FAIR HUMIDITY RECOVERY. WINDS DIMINISHING SLOWLY.
MINIMUM TEMPERATURE 40. MAXIMUM HUMIDITY 50. WINDS BECOMING NORTHWEST 5-10 MPH THROUGH MOST OF NIGHT.
OUTLOOK FOR MONDAY...FAIR AND NOT AS HOT OR WINDY...
END BOISE FIRE WEATHER

TARGHEE COPY THANKS

GALLAGHER PEAK FIRE - NIGHT SHIFT 8/6/79
FIRE SITUATION AND FIRE WEATHER

RED FLAG WARNING HAVE A CHANCE OF DRY THUNDERSTORMS THIS AFTERNOON AND EVENING.

HIGH PRESSURE WITH WARM, DRY, UNSTABLE AIR TO CONTINUE OVER THE AREA. MODERATE TO STRONG WEST TO SOUTHWEST FLOW ALOFT OVER REGION.

REMAINDER OF DAY PARTLY CLOUDY WITH ASSOCIATED DRY THUNDERSHOWERS BY THIS EVENING. MAXIMUM TEMP 90° AT 7,000 FT. MINIMUM RH 10% OR LESS.

WINDS VARIABLE FROM SSE TO SSW, 6-14 MPH WITH LOCALLY STRONG GUSTS IN VICINITY OF DRY THUNDERSTORMS. WINDS OCCASSIONALLY WESTERLY IN VICINITY OF RIDGE CREST GUSTING TO 20 MPH.

CHANCE OF DRY THUNDERSTORMS UNTIL TONIGHT.

TOMORROW PARTLY CLOUDY WITH VARIABLE TEMPERATURES, POOR HUMIDITY RECOVERY. MINIMUM TEMPERATURE - BOTTOM 50° AND AT TOP 38°. MAXIMUM HUMIDITY 45%. WINDS VARIABLE, MOSTLY DOWN VALLEY 4-8 MPH AFTER MIDNIGHT. OUTLOOK FOR TUESDAY, PARTLY CLOUDY WITH CHANCE OF ASSOCIATED, MOSTLY DRY THUNDERSTORMS IN AFTERNOON. TEMPERATURES AND HUMIDITY LITTLE CHANCE FROM TODAY.

TO TARGHEE NATIONAL FOREST - AUGUST 7, 1979
FROM NATIONAL WEATHER SERVICE...BOISE IDAHO

DISCUSSION...RED FLAG WARNING FOR WIDELY SCATTERED THUNDERSTORMS THIS AFTERNOON AND EVENING. WEST TO SOUTHWEST FLOW ALOFT WITH WARM UNSTABLE AIR CONTINUING OVER THE AREA.

TODAY...PARTLY CLOUDY WITH WIDELY SCATTERED THUNDERSHOWERS THIS AFTERNOON AND EVENING. MAX TEMP 93. MIN REL 12 PERCENT. WINDS INCREASING DURING THE MORNING BECOMING SOUTHERLY 8 TO 15 MPH THIS AFTERNOON BUT OCCASIONALLY WESTERLY TO 20 MPH ALONG RIDGE CRESTS. HIGHER GUSTS VICINITY THUNDERSHOWERS.

TONIGHT...THUNDERSHOWERS ENDING AROUND MIDNIGHT. MIN TEMPS NEAR TT 55 BOTTOM AND NEAR 40 TOP. MAX HUMIDITY 45 PERCENT. WINDS MOSTLY DOWN SLOPE/DOWN VALLEY 4 TO 8 MPH AFTER MIDNIGHT.

OUTLOOK FOR WEDNESDAY...LITTLE CHANGE FROM TODAY.

END BOISE FIRE WEATHER...

89-4 TARGHEE CLEAR 19-4 10-4

TO TARGHEE NATIONAL FOREST DISPATCH
FM NATIONAL WEATHER SERVICE BOISE IDAHO

SPOT FORECAST FOR GALLAGHER PEAK FIRE
ISSUED 430 AM MDT WEDNESDAY AUG 8 1979

DISCUSSION...SOUTHWEST FLOW ALOFT CONTINUING WITH WARM AIRMASS. MOISTURE CONTINUING TO MOVE NORTHEASTWARD FROM UTAH AND NEVADA FOR SCATTERED THUNDERSTORM ACTIVITY. RAINFALL MOSTLY LIGHT.

TODAY...VARIABLE CLOUDS WITH SCATTERED THUNDERSTORMS MAINLY IN THE AFTERNOON. SLIGHTLY WARMER. MAX TEMP 80 TO 85. MIN RH 40 TO 45 PERCENT. WINDS MOSTLY S 3 TO 7 MPH.

TONIGHT...VARIABLE CLOUDS WITH WIDELY SCATTERED THUNDERSTORMS. FAIR TEMP RECOVERY AND GOOD HUMIDITY RECOVERY. MIN TEMP 50 TO 55. MAX RH 70 TO 90 PERCENT. WINDS BECOMING VARIABLE TO 5 MPH.
END...BOISE FIRE WEATHER

THANKS TARGHEE

55
US FOREST SERVICE
FM NATIONAL WEATHER SERVICE BOISE IDAHO

SPOT FORECAST FOR GALLAGHER PEAK FIRE
ISSUED 345 PM MDT WEDNESDAY AUG 8 1979

DISCUSSION...SOUTHWEST FLOW ALOFT CONTINUING WITH TROPICAL MOISTURE FEEDING INTO CENTRAL AND SOUTHERN IDAHO AND WESTERN WYOMING. MOISTURE DECREASING SLIGHTLY THURSDAY.

TONIGHT...PARTLY CLOUDY TO CLOUDY WITH WIDELY SCATTERED THUNDERSTORMS...WITH SOME WETTING RAIN TIL MIDNIGHT. FAIR TEMPERATURE RECOVERY AND GOOD HUMIDITY RECOVERY. MIN TEMPERATURE 40 TO 45. MAX RH 90 TO 100 PERCENT. WINDS LIGHT DRAINAGE TO 5 MPH EXCEPT GUSTY NEAR THUNDERSTORMS.

THURSDAY...PARTLY CLOUDY WITH ISOLATED THUNDERSTORMS. WINDS SOUTHERLY 10 TO 20 MPH. HUMIDITY A LITTLE LOWER AND TEMPS UP A FEW DEGREES DUE TO LESS CLOUD. MAX TEMP NEAR 85 BOTTOM AND 65 TO MAX TEMP 80 TO 85. MIN RH 15 PERCENT.
END BOISE FORE WEATHER

TARGHEE COPY

Gallagher Peak Fire Appendix

GALLAGHER PEAK FIRE
NARRATIVE

The Gallagher Peak Fire was detected on July 6, 1979, at 1630 by a Bureau of Land Management spotter plane. The fire was obviously lightning caused and started at approximately 1615 of the same day. The BLM aerial observer who was Division Boss rated reported the fire immediately to the Forest Dispatcher. The fire was on Gallagher Peak burning in light fuel of down woody material and grass at an elevation of 9,400 feet. The BLM observer estimated that the fire would not exceed 2 acres in size because of location and fuel type. The Forest Dispatcher called the Dubois Ranger District and informed Acting District Ranger Anthony Varilone of the fire. He made the decision to take no suppression action on the fire because of its location within the area covered by the High Country Fire Management Area. This decision was within the intent of the HCFMA Plan.

The fire was flown numerous times after its detection to observe its progress and just because people were interested. The fire would die down at night and during the morning so that at times the smoke was barely visible. In the afternoons a small column was visible. However, at no time was the fire burning on more than 20 acres at any one time. Several escaped fire analysis were made because the fire had escaped the 10 acre prescription spelled out in the HCFMA Plan. All analyses selected the non-suppression alternative because of the low resource value and the benefits to be derived by letting the fire burn at its present level.

On July 22, 1979, the weather station at Dubois received 0.39 inches of rain. This was a general shower and the fire area received as much or more precipitation. Up to this time the fire had burned over a total area of approximately 150 acres and done an excellent job of cleaning up ground fuels.

The BI for this period had averaged in the sixties and the 1000 hour T.L. fuel moisture had gone from 13 to eight. The precipitation decreased the BI to zero and raised the 1000 hour fuels to ten.

The fire appeared to be out from distant observation points until July 26 when three small smokes were observed. The BI had increased to 61 by this time and the 1000 hour fuels were still at ten. The fire again continued its earlier burning pattern and consumed an additional 150 acres until August third.

On this date (August 3) the 1000 hour fuels were at nine and the BI was 65. The winds for that afternoon were very strong from the south at 25 to 30 mph, and gusts up to thirty five. The fire began to develop a strong column in the late afternoon. The District Ranger, Don Owen, and the Forest Dispatcher, Jay Benson, flew the fire at 1730 hours. The fire was burning below the timber at about 7000 feet elevation and they thought it would go out in the grass by night fall.

At 2030 hours the District Fuels Management technician was sent to the fire to make sure it was going out in the grass and sagebrush. The fire was still burning into Blue Canyon to the north and Chandler Canyon to the east. At this point two additional men from the District were sent to help and a pumper crew from the Ashton District was ordered. Two BLM pumper crews were also dispatched. All forces arrived at approximately 0100 hours on August 4, 1979. There was not much that could be done to control the fire in upper Blue Canyon because of the steep rocky terrain and heavy timber. Efforts were concentrated on the lower slopes in the grass-sagebrush to keep the fire off private and BLM land and keep it from spreading in those flashy fuel types. The increased relative humidity and lower temperatures in the night actually stopped the fire at lower elevations in the flashy fuels and caused it to lie down in the timber areas up higher. A band of sheep were discovered in Blue Canyon directly in the path of the fire if it continued to spread. Efforts were initiated to move the sheep.

Early in the morning of August 4 the winds on the fire area again increased to 20 - 30 mph with gusts to 35 mph. An escaped fire analysis was made and it was decided to man the fire because it was out of control and was endangering livestock, private land, and property.

An overhead team composed of Forest personnel was formed and three twenty man crews were ordered. Four tankers - two BLM and two Forest, attempted to hold the fire in Chandler Canyon until the arrival of the team and the three crews. The fire blew out of Chandler Canyon before their arrival.

Retardant planes were ordered to try and stop the fire spread in Crooked Creek in direct and indirect attack. The drops were largely unsuccessful because of the rapid rate of spread in the sagebrush. The helicopter from the Bridger Teton National Forest was brought in for reconnaisance and it was also used to herd cattle to safety.

The current Fire Boss, Tony Varilone, recognizing that the fire was beyond his capabilities requested that he be replaced. Andy Finn arrived to take over at 1800 hours on August fourth.

The available tankers and manpower were used to try and contain the fire south of the Crooked Creek road by burning out. The two tractors which had been ordered and had arrived were used to construct line from Crooked Creek to Chandler Canyon. This action continued into and through the night. By the morning of August 5th these actions were complete except for burning out in the head of Buckhorn Creek a tributary of Nicholia Canyon. They appeared to be successful.

On August 5th all crews were pulled off the fire to rest and the only relatively fresh crew, the two BLM tankers, were put out. The two cats were also pulled off. At about 1400 hours high winds of 40 mph caused the fire to burn out the head of Buckhorn Canyon into the head of Crooked Creek. By 1800 hours the fire size was 20,000 acres. The Fire Boss, Andy Finn, Del Marsolek, Forest Fire Staff and the Ranger, Donis Owen requested a Class I Overhead Team.

The effort on the night of August 5 was to keep the fire from spreading south and east of Crooked Creek with four 20 man crews and two cats.

The fire was moving too fast during the day when winds were strong to put men and equipment on the line.

On August 6th the Class I Team arrived from R-2 and continued with the planned attack. That day the fire burned across Crooked Creek and into the South Fork of Webber Creek and Meyers Creek pushed by strong south winds. Night action consisted of hand lining the east and north flanks.

On August 7th precipitation fell in the amount of 0.08 to 0.10 inches and winds decreased. From August 8th to 11th rain continued to fall. Control lines were completed and mop up progressed.

The Overhead Team turned the fire back to the Forest on August 12th. Mop up and patrol continued until August 20th when the fire was declared out.

OBSERVATIONS AND RECOMMENDATIONS

1. Action on the Gallagher Peak Fire was commensurate with the HCFMA Plan but the extreme weather conditions this season were not calculated into the plan. The plan needs to be fine tuned to recognize and compensate for these weather extremes.

2. Normally this area of the Forest receives frequent and heavy thundershowers in July and August. This weather did not occur this year. Forest personnel were lulled into thinking it would occur simply because it always had done so.

3. The fire should have received suppression action on July 26 after smoke again appeared following the rain. This was not done because the fire behavior previous to the rain was not excessive and more rain was expected as explained in the last point.

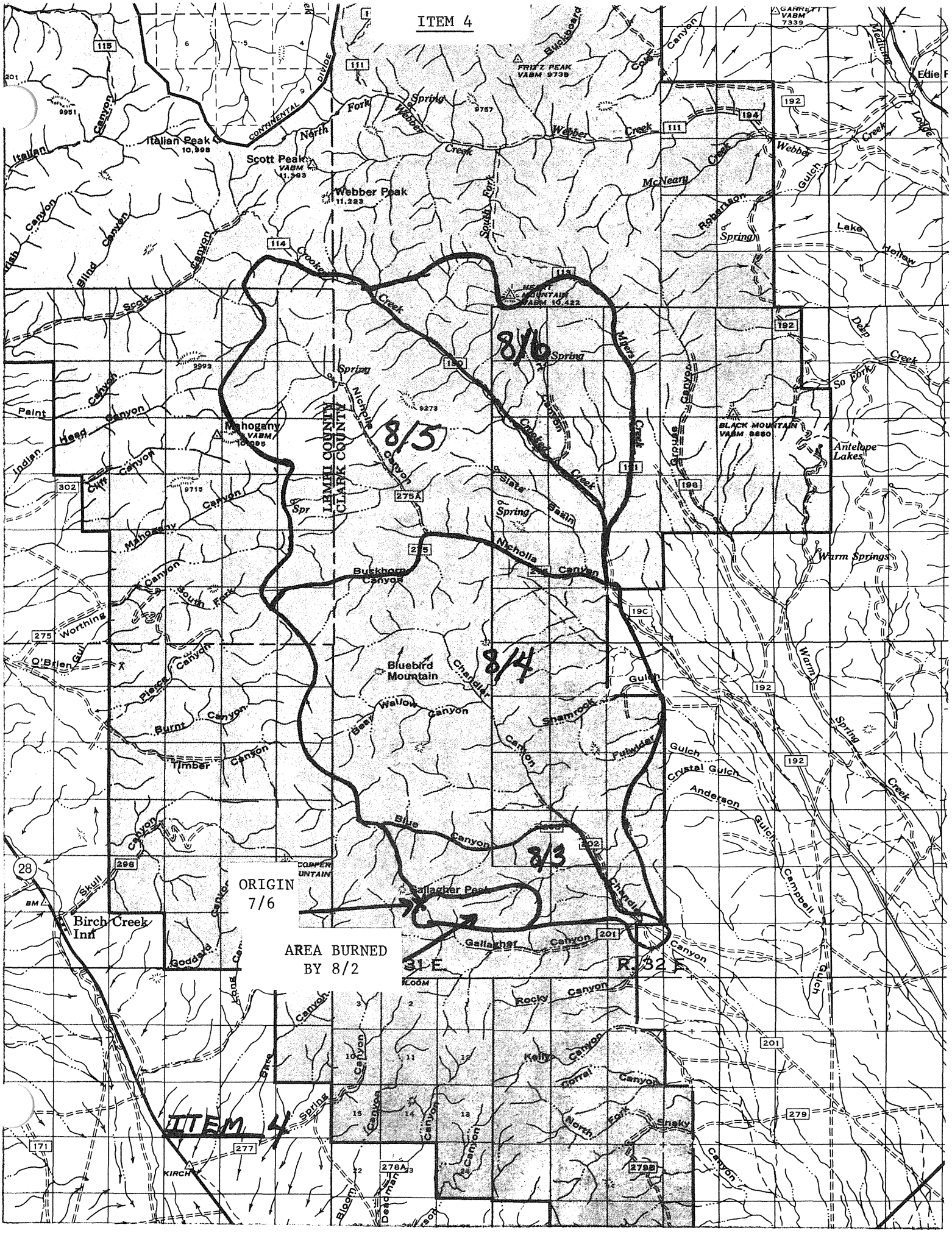
4. The final result of Gallagher Peak Fire has been beneficial to Range and wildlife and only slightly detrimental to watershed. This fire is a natural part of the ecosystem in that area. The timber stands were all 80 to 150 years old and it is obvious that a similar fire burned here in the same manner 100 to 200 years ago.

5. A Class I Overhead Team should have been ordered on August fourth but the numerous other major fires in Idaho at the time made it seem difficult to obtain a team.

6. The tactic of not manning the fire during the day on August 4, 5, and 6 was appropriate and probably saved some lives.

Anthony A. Varilone

ANTHONY A. VARILONE
Forester


ITEM 4
ORIGIN
7/6
AREA BURNED
BY 8/2
8/6
8/5
8/4
8/3
Italian Peak
10,998
Scott Peak
VABM
11,993
Webber Peak
11,223
Mahogany
VABM
10,995
Bluebird
Mountain
Gallagher Peak
Birch Creek
Inn
LEMHI COUNTY
CLARK COUNTY
Black Mountain
VABM 8660
Antelope
Lakes
Warm Springs
Fritz Peak
VABM 9738
Garrett
VABM
7339
Webber
Creek
North Fork
Webber
Creek
McNeary
Creek
Robertson
Spring
Lake
Hollow
Deep
Creek
So Fork
Creek
Miners
Canyon
Creek
Nicholia
Canyon
Nicholia
Creek
Slate
Basin
Spring
Butkhorn
Canyon
Mahogany
Canyon
South Fork
Worthing
Gulch
O'Brien
Gulch
Pierce
Canyon
Burnt
Canyon
Timber
Canyon
Beaver
Canyon
Wallow
Canyon
Chandler
Gulch
Shamrock
Gulch
Fullwider
Gulch
Crystal Gulch
Anderson
Gulch
Warm
Spring
Creek
Campbell
Gulch
Blue
Canyon
Gallagher
Canyon
Rocky
Canyon
Kelly
Canyon
Corral
Canyon
North
Fork
Snaky
Canyon
Skull
Canyon
Goddard
Canyon
Spring
Canyon
Deadman
Canyon
Paint
Canyon
Indian
Head
Canyon
Cliff
Canyon
Mahogany
Canyon
Scott
Canyon
Blind
Canyon
Italian
Canyon
Continental
Divide
Bluebird
Canyon
Webber
Spring
Grooter
Creek
Spring
Spring
Spring

IV. KEY REGIONAL DECISIONS/JUDGEMENTS

A. Gallagher Peak Fire.

1. The Forest Supervisor selected a "non-suppression" alternative on each escaped fire analysis, rather than suppression. This decision was based upon what he considered as positive resource benefit from the wildfire. National direction implies that a no-suppression alternative may be considered in the analysis; however, this is contrary to the intent of the policy.

2. The weather conditions on the Gallagher Peak Fire had not been forecasted to the degree that occurred. Twenty-year weather records indicated a much lower "worst condition" and the Fire Management Area Planning indicated the lower "worst condition" would not be threatening to land management objectives. Certainly, people can point out the fact that the 1000-hour fuel moisture readings were critically low and the Palmer Drought Index was also in the critical stage. The majority of the acreage burned (32,400 out of 37,000 acres) was sagebrush and grayed grasslands. This fuel model is impacted more by the 10-and 100-hour fuel moisture indicators which were well within the limits until the rapid change in weather conditions. The 10-hour fuel moisture change is directly related to the daily weather conditions. Experience shows that when fire weather conditions reach the upper 10 percentile, reliability of forecast drops to about a 70 percent accuracy. Especially if the local weather recordings are not taken on site. The actual weather recordings for the area fire weather forecast were taken at two locations many miles away from the fire, but were representative of the area forecast.

3. Forest Class II fire team did not plan for potential containment or control in any of the escaped fire situation analysis.

(a) Also, the fire team underestimated the fire potentials during a draught year. Did not use fire behavior projections.

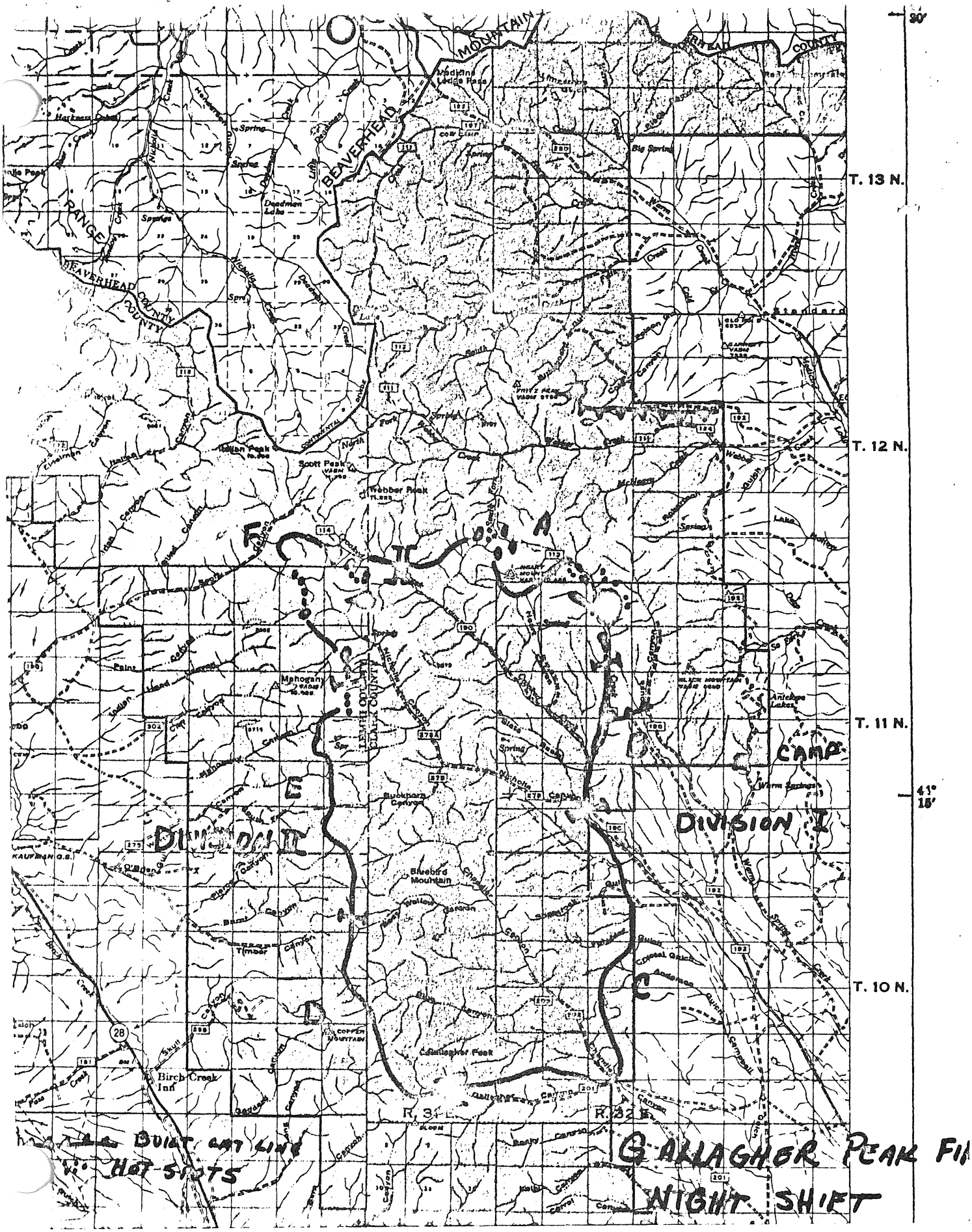
(b) Used personnel knowledge and assessment.

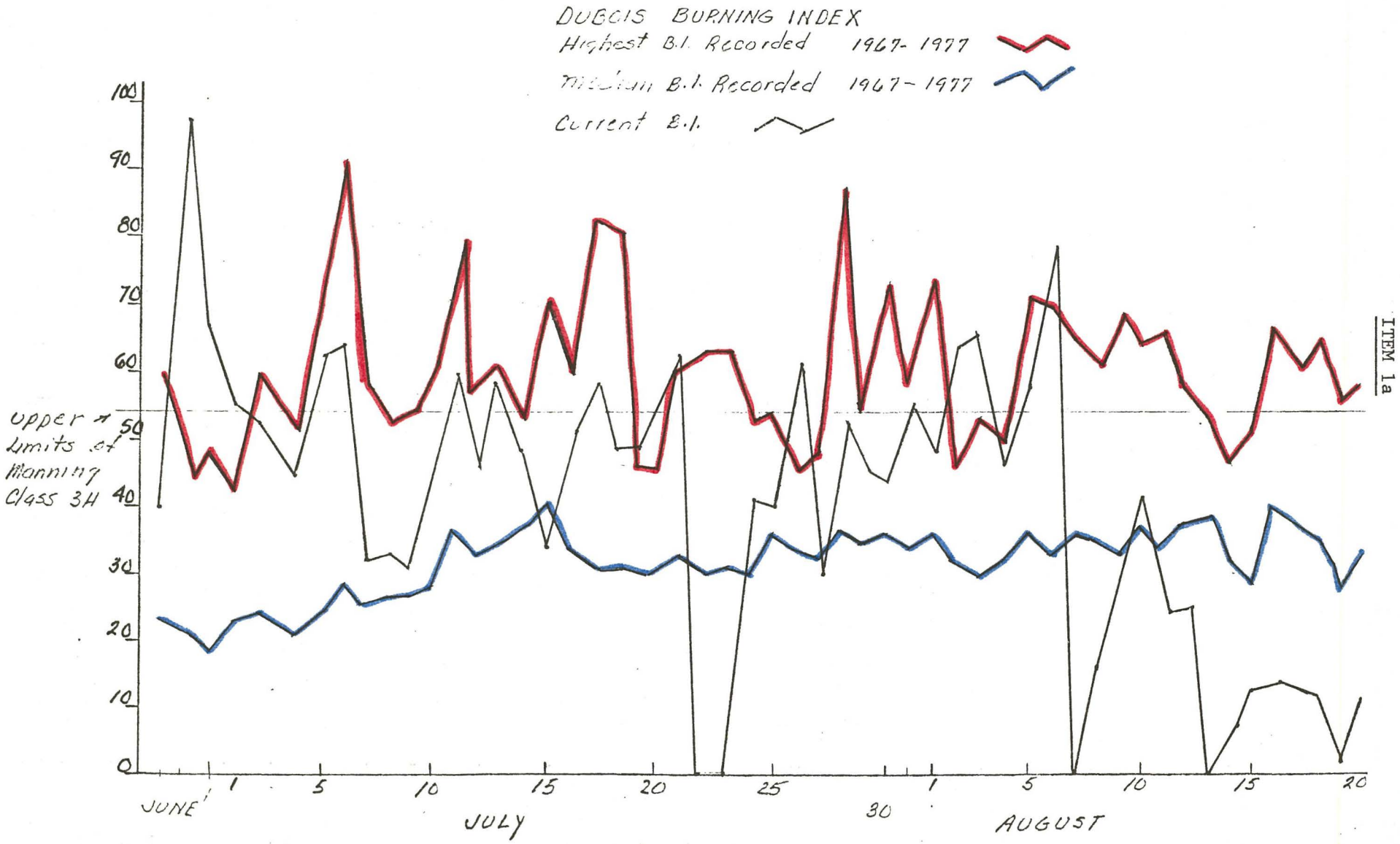
(c) Forest fire behavior specialists were off Forest on other fire assignments.

(d) First real test of their fire management plan prescription. First real test nationally.

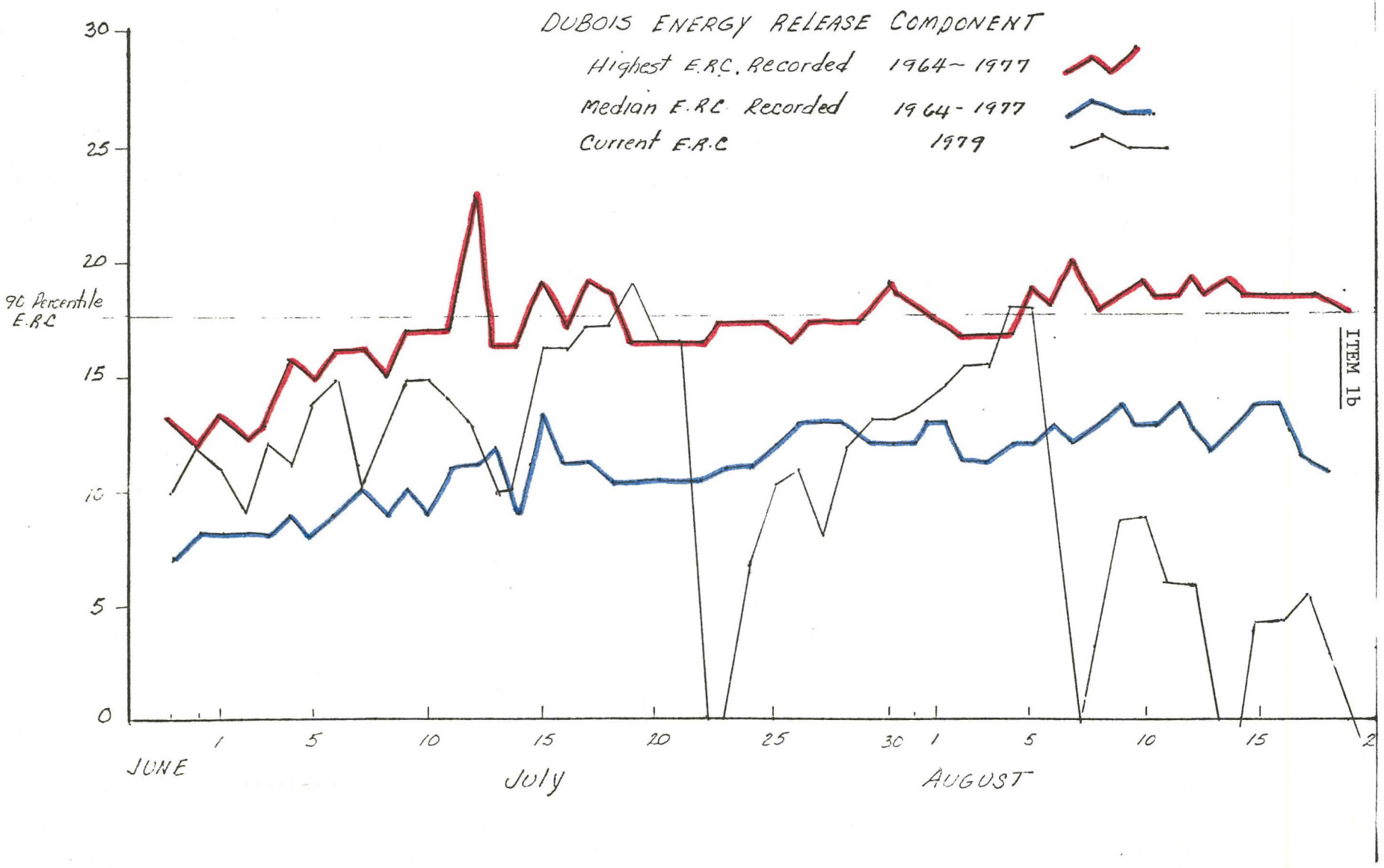
4. Regional and national direction on "how to" implement fire management area planning was vague and practically non-existent at the time the Targhee High Country Plan was approved. Region 4 has since distributed a rough draft manual supplement (May 1979) to the field for guidance on future planning areas. This manual supplement had not been formalized to date.

The High Country Plan had not been modified to incorporate the proposed direction.


BEAVERHEAD MOUNTAIN
RANGE
BEAVERHEAD COUNTY
Scott Peak
Webber Peak
Mahogany
Bluebird Mountain
Timber
Birch Creek Inn
Big Spring
Standard
Paint
Antelope Lakes
Warm Springs
Buckhorn Canyon
Gallagher Peak
COPPER MOUNTAIN
DIVISION I
DIVISION II
CAMP
T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
R. 31 E.
R. 32 E.
41° 15'
30'
BUILT CAT LINE
HOT SPOTS
GALLAGHER PEAK FI
NIGHT SHIFT


DUBOIS BURNING INDEX
Highest B.I. Recorded 1967-1977
Medium B.I. Recorded 1967-1977
Current B.I.
100
90
80
70
60
50
40
30
20
10
0
upper limits of Manning Class 3H
JUNE
1
5
10
15
20
25
JULY
30
1
5
10
15
20
AUGUST

ITEM 1a


DUBOIS ENERGY RELEASE COMPONENT
Highest E.R.C. Recorded 1964-1977
Median E.R.C. Recorded 1964-1977
Current E.R.C 1979
90 Percentile E.R.C
30
25
20
15
10
5
0
1
5
10
15
20
25
30
1
5
10
15
JUNE
July
AUGUST

ITEM 1b

ITEM 2 - Weather Forecast

FUEL	1000 T/L	DAY	IC	SC	EC	BI	MC	R
T	11	7/2	40	51	9	50	3	Hi
H	11	7/2	43	5	29	29		
T	11	7/3	41	36	13	50	3	Hi
H	11	7/3	46	4	33	27		
T	10	7/4	33	30	11	43	3	Hi
H	10	7/4	37	3	31	25		
T	10	7/5	58	54	14	64	4	
H	10	7/5	62	5	35	32		
T	10	7/6	61	55	14	65	4	
H	10	7/6	65	5	35	33		
T	10	7/7	23	16	10	31	3	Lo
H	10	7/7	31	2	31	21		
T	10	7/8	26	14	13	32	3	Lo
H	10	7/8	36	2	34	22		
T	10	7/9	26	9	16	30	3	Lo
H	10	7/9	41	2	37	22		
T	9	7/10	69	71	16	77	5	Ext
H	9	7/10	73	7	39	39		
T	9	7/11	46	45	14	58	4	Hi
H	9	7/11	50	4	38			
T	9	7/12	32	29	12	45	3	Hi
H	9	7/12	37	3	36	27		
T	9	7/13	42	55	12	59	4	
H	9	7/13	44	5	35	32		
T	9	7/14	32	33	11	46	3	Hi
H	9	7/14	37	4	33	27		
T	9	7/15	28	12	16	34	3	Lo
H	9	7/15	42	2	38	23		
T	9	7/16	44	28	16	50	3	Hi
H	9	7/16	54	3	39	29		
T	9	7/17	52	38	17	58	4	Hi
H	9	7/17	61	4	40	32		
T	8	7/18	43	24	17	48	3	Hi
H	8	7/18	55	3	40	29		
T	8	7/19	46	38	16	56	4	
H	8	7/19	53	4	40	32		

ITEM 2 - Weather Forecast

FUEL	1000 T/L	Day	IC	SC	EC	BI	MC	R
T	8	7/20	46	38	16	56	4	
H	8	7/20	53	4	40	32		
T	8	7/21	53	45	16	62	4	
H	8	7/21	60	5	41	34		
T	9	7/22	0	0	0	0		.39 precip.
H	9	7/22	0	0	0	0		
T	10	7/23	3	4	0	0	1	.13 precip.
H	10	7/23	7	2	13	13		
T	10	7/24	31	36	7	39	3	Lo
H	10	7/24	35	4	24	24		
T	10	7/25	30	26	10	39	3	Lo
H	10	7/25	36	3	27	23		
T	10	7/26	50	62	11	61	4	
H	10	7/26	52	6	30	32		
T	10	7/27	20	15	9	29	3	Lo
H	10	7/27	27	2	30	21		
T	10	7/28	43	46	11	53	3	Hi
H	10	7/28	48	5	31	29		
T	10	7/29	33	24	13	42	3	Hi
H	10	7/29	41	3	33	26		
T	9	7/30	34	25	13	43	3	Hi
H	9	7/30	42	3	34	26		
T	9	7/31	47	40	14	56	4	Hi
H	9	7/31	54	4	36	31		
T	9	8/1	41	26	15	48	3	Hi
H	9	8/1	51	3	38	28		
T	9	8/2	55	48	16	63	4	
H	9	8/2	62	5	40	35		
T	9	8/3	56	49	16	65	4	Hi
H	9	8/3	64	5	50	35		

USDA FOREST SERVICE

INDIVIDUAL FIRE REPORT

FIRE NAME: Gallagher Peak

RANGER FIRE NO.: 3

MANDATORY ITEMS: CLASS A 1-33 CLASS B 1-34 CLASS C to G 1-44

REGION FIRE NO.:

1. State [2-3]	2. County	3. Forest [4-5]	4. District [6-7]	5. Supervisor No. [8-10]
Idaho 16	Clark & Lemhi	Targhee 15	01	703

6. Fire started on [11]	7. Month [12]	Day [13-14]	Year [15]	8. Watershed No. [16-23]	9. Size Class [24]
National Forest 1	July 7	6	06 1979 9	17040215	37230 G

10. Statistical Cause [25]	11. General Cause [26]	12. Specific Cause [27-28]	13. Class of people [29]
Lightning 1	Lightning 0	Lightning 01	0

	DATE Mo. Day	HOUR	ELAPSED TIME Hours	Min.
14. Origin	7 6	1615	[30-31] 16	
15. Discovered (Item 15 minus 14)	7 6	1630	[32-33] 00	[34-35] 15
16. First attack (Item 16 minus 15)	8 3	2330	[36-37] 99	[38-39] 99
17. First Reinforcement (Item 17 minus 16)	8 4	0030	[40] 1	[41-42] 00
18. Fire Controlled Item 18 minus 16	8 12	1800	[43-45] 211	
19. Fire Out	8 20	1800		

20. Discovered by (Class) | Location: B.L.M. aircraft / OVER FIRE — [46] 8

21. First Attack by | (Kind): Pumper | (Amount): 3 men — [47-48] 33

22. First Reinforcements (Kind) | (Amount): B.L.M. tanker 7 men — [49-50] 36

23. Maximum No. Personnel — [51-54] 0301

24. Value Class at Origin — [55] 1

25. Fire danger: B.I. 65 Fuel Model "T" — [56-57] 65

26. Special Weather feature: 30 M.P.H. "G" — [58] 9

27. Slope: 55% — [59] 5

28. Aspect: East — [60] 1

29. Elevation: 9400 — [61] 9

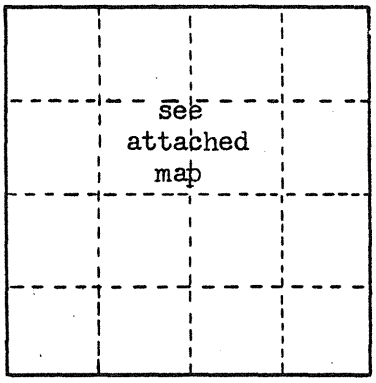
30. Cover type - vicinity of origin — [62-63] 10

31. Fuel type - vicinity of origin: LL — [64-69] 000011

32. Cost Class: $487,000 — [70] 6

33. Location

Scale: _____ inches = 1 mile



Location description

a. Township	[71-74] 010N
b. Range	[75-78] 031E
c. Section	[79-80] 26
d. Meridian: Boise	

Alternate description for lands not covered by GLO survey

e. Latitude	[72-75] 4915
f. Longitude	[76-80] 11245

34. Acres burned	NATIONAL FOREST LANDS	OTHER LANDS INSIDE
a. Noncommercial forest	[11-16] 002520	[17-21] 00000
b. Commercial forest (1) Natural	[22-27] 000000	[28-32] 00000
(2) Plantation	[33-37] 00000	[38-42] 00000
c. Nonforest	[43-48] 034090	[49-53] 00620
35. Volume of timber destroyed (MBM)	[54-59] 06000	[60-64] 00000

36. Total area when controlled — [65-70] 037230

37. Fuel type prevailing on burned area — [71-76] 000031

38. Topography (vicinity of origin) — [77] 9

39. Highest Fire Danger — [78-79] 78

40. Critical Weather Feature: 30 m.p.h. "G" — [80] 9

Remarks (Continue on reverse if required)

Targhee N.F. High Country Fire Management Area

The attached narrative is composed of three different reports that document the sequence of events of the fire up to the arrival of the R-2 Overhead Team. Their daily plans which are available document the events after takeover.

Submitted (Signature)	Date	Approved (Signature)	Date
Clifford A. Vanlue	9/17/79	Everett Mathis (Acting) Forest S	12-17-79

Value of Resources Damaged or Destroyed (Code in hundreds of dollars)		N.F. LANDS (1)		OTHER LANDS (2) INSIDE FS PROTECTION	
		Dollars	Code	Dollars	Code
41. Timber		12000	[11-15] 00120	0	[16-20] 00000
42. Other (non-timber)					
a. Watershed		3000	[21-25] 00030	0	[26-29] 0000
b. Recreation			[30-34] 00000	0	[35-38] 0000
c. Range & Wildlife		30000		0	
d. Improvements		1000		2000	
e. Other non-timber		0			
f. Total non-timber (a to e incl.)		34000	[39-43] 00340	2000	[44-48] 00020
43. GRAND TOTAL (Items 41 and 42f)		46000		2000	
44. Acres burned by Value Class	Value Class		Acres		Acres
	[49] 1		[50-54] 36610		[55-59] 00620
	[60] -		[61-65] -----		[66-70] -----
	[71] -		[72-75] ----		[76-79] ----

ITEM 5

NATIONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO AUGUST 3, 1979
MORNING FIRE WEATHER FORECAST ISSUED 0930 AM MDT FRIDAY

...RED FLAG WARNING AREAS II AND III THIS AFTERNOON THRU THIS EVENING...

DISCUSSION: RED FLAG WARNINGS ARE NOW POSTED FOR AREAS II AND III FOR THIS AFTERNOON AND THIS EVENING. MARINE AIR SPILLING OVER THE CASCADES HAS INCREASED SURFACE PRESSURE GRADIENTS TODAY AND WITH A BRISK WEST TO SOUTHWESTERLY WINDFLOW ALOFT...GENERALLY WEST TO SOUTHWEST GUSTY WINDS BETWEEN 15 AND 30 MPH WITH SOME HIGHER GUSTS HIGHER RIDGES WILL DEVELOP THIS AFTERNOON AND EVENING. WARM AND DRY CONDITIONS WILL PERSIST OVER THE ENTIRE DISTRICT TODAY AND SATURDAY...EXCEPT A LITTLE COOLER WEST AND NORTH SATURDAY.

AREA I ZONES 411-417
TODAY...SUNNY AND HOT. LOCAL GUSTY AFTERNOON WINDS.
FREE AIR WIND...WEST TO NORTHWEST 10-25 MPH.
TONIGHT...FAIR
SATURDAY: SUNNY AND CONTINUED WARM AND DRY. LOCAL GUSTY AFTERNOON WINDS.
AIR DISPERSAL...EXCELLENT TTRHFLAND SATURDAY...POOR TONIGHT.

AREA II ZONES 408-410 AND 637
TODAY...RED FLAG WARNING GOR GUSTY WINDS 15 TO 30 MPH THIS AFTERNOON AND EVENING WITH SOME HIGHER GUSTS HIGHER RIDGES. SUNNY WARM AND DRY.
FREE AIR WIND...WESTERLY 15 TO 30 MPH.
TONIGHT: FAIR WITH DECREASING WINDS AFTER SUNSET.
SATURDAY: SUNNY AND DRY. LITTLE COOLER WEST/NOT MUCH TEMPERATURE CHANGE EAST.
AIR DISPERSAL: EXCELLENT TODAY POOR TONIGHT AND GOOD SATURDAY

AREA III ZONES 401-407
TODAY: RED FLAG WARNING FOR GUSTY WINDS 15 TO 30 MPH THIS AFTERNOON AND EVENING WITH SOME HIGHER GUSTS HIGHER RIDGES. SUNNY WARM AND DRY.
TONIGHT...FAIR WITH DECREASING WINDS AFTER SUNSET.
SATURDAY: SUNNY AND CONTINUED DRY BUT A LITTLE COOLER.
AIR DISPERSAL...EXCELLENT TODAY...POOR TONIGHT...GOOD SATURDAY

EXTENDED FORECAST FOR SUNDAY THRU TUESDAY: MOSTLY FAIR WITH NEAR NORMAL TEMPERATURES.

EXTENDED OUTLOOK FOR AUG 8 THRU AUG 12...DRY WITH NEAR TO OR ABOVE NORMAL TEMPERATURES.
END BOISE FIRE WEATHER

TO TARGHEE NATIONAL FOREST DISPATCH
FROM BOISE FIRE WEATHER

SPOT WEATHER FORECAST FOR GALLAGHER PEAK FIRE
ISSUED 630 PM MDT FRIDAY AUG 3 79
DISCUSSION. . .LOW PRESSURE IN MONTANA CAUSING STRONG WEST TO SOUTH -WESTERLY WINDS THIS EVENING. WINDS WILL DIMINISH TOWARD MORNING. WEAK HIGH PRESSURE TO BUILD OVER REGION SATURDAY WITH ANOTHER LOW PRESSURE AREA MOVING INTO AREA SUNDAY FOR MORE WINDS SUNDAY.

RED FLAG FOR THIS EVENING WITH WINDS WESTSOUTHWEST 10 TO 15 MPH AND GUSTY BECOMING NORTHWESTERLY DURING NIGHT. WINDS SLOWLY DECREASING LOWER ELEVATIONS BY DARK AND ALL ELEVATIONS BY MORNING. CLEAR AFTER DARK 50 BOTTOM AND 55 TOP.
RELATIVE HUMIDITY. . .MAXIMUM TONIGHT 45 TO 55 PERCENT.

SATURDAY. . .CLEAR AND LITTLE COOLER WITH LESS WIND. MAX TEMP 78. MIN HUMIDITY 18 PERCENT. WINDS WEST TO NORTHWEST 5-10 AM INCREASING TO 10-15 MPH AFTERNOON.

TO TARGHEE NATIONAL FOREST DISPATCHER
FM BOISE FIRE WEATHER

SPOT FORECAST FOR GALLAGHER PEAK MGT FIRE #703
ISSUED 3:30 PM MDT SAT 04 AUG 79
DISCUSSION...HIGH PRESSURE ALOFT WITH HEAT THROUGH AT SURFACE OVER SOUTH CENTRAL IDAHO BECOMING MORE INTENSE. STRONG SOUTHWESTERLY FLOW ALOFT.

TEMPERATURES....MINIMUM TONIGHT 50 TO 55 AT 7700 FT
MAXIMUM SUNDAY 92 TO 97 AT 7700 FT
HUMIDITY.....MAXIMUM TONIGHT 40 TO 45 PCT
MINIMUM SUNDAY AT MAX HEATING 6 TO 10 PCT

WINDS...BRISK SOUTHWEST 13 TO 20 MPH WITH RISK GUSTS NEAR 30 TIL SUNSET. WINDS SLOWLY DECREASING TO 8 TO 13 MPH BETWEEN SUNSET AND MID NIGHT AT UPPER REACHES OF FIRE. WINDS TO BE 4 TO 8 MPH AT THE VERY BOTTOM OF FIRE. WINDS TO INCREASE RAPIDLY FORENOON SUNDAY FROM THE SOUTHWEST WITH GUSTS TO NEAR 30 LIKELY BY MID AFTERNOON.
END

BOISE FIRE WEATHER FORECAST NOW IN AFFIRMS 1558 MDT FG

TARGHEE COPY THANKS

TO TARGHEE NATIONAL FOREST
FM BOISE FIRE WEATHER

SPOT FORECAST FOR GALLAGHER PEAK FIRE
ISSUED 7 AM MDT SUN 05 AUG 79
DISCUSSION...THERMAL THROUGH OVER W IDAHO YESTERDAY HAS PUSHED INTO EAST IDAHO TODAY. WITH LITTLE MOISTURE FROM SOUTH GUSTY AFTERNOON WINDS AND FEW THUNDERSTORMS ARE LIKELY.
TODAY...PARTLY SUNNY, HOT AND DRY BECOMING PARTLY CLOUDY WITH CHANCE OF A THUNDERSTORM AFTERNOON WITH GUSTY WINDS.
MAXIMUM TEMPERATURE TODAY. 85...MINIMUM HUMIDITY 12 PERCENT.
WINDS SOUTH TO SOUTHWEST 8-12 AM INCREASING TO 12-18 BY NOON. WINDS BECOMING MORE WESTERLY AND GUSTY MID AFTERNOON TIL EVENING.

TONIGHT...CLEARING AFTER SUNSET WITH GOOD TEMPERATURE AND FAIR HUMIDITY RECOVERY. WINDS DIMINISHING SLOWLY.
MINIMUM TEMPERATURE 40. MAXIMUM HUMIDITY 50. WINDS BECOMING NORTHWEST 5-10 MPH THROUGH MOST OF NIGHT.
OUTLOOK FOR MONDAY...FAIR AND NOT AS HOT OR WINDY...
END BOISE FIRE WEATHER

TARGHEE COPY THANKS

GALLAGHER PEAK FIRE - NIGHT SHIFT 8/6/79
FIRE SITUATION AND FIRE WEATHER

RED FLAG WARNING HAVE A CHANCE OF DRY THUNDERSTORMS THIS AFTERNOON AND EVENING.

HIGH PRESSURE WITH WARM, DRY, UNSTABLE AIR TO CONTINUE OVER THE AREA. MODERATE TO STRONG WEST TO SOUTHWEST FLOW ALOFT OVER REGION.

REMAINDER OF DAY PARTLY CLOUDY WITH ASSOCIATED DRY THUNDERSHOWERS BY THIS EVENING. MAXIMUM TEMP 90° AT 7,000 FT. MINIMUM RH 10% OR LESS.

WINDS VARIABLE FROM SSE TO SSW, 6-14 MPH WITH LOCALLY STRONG GUSTS IN VICINITY OF DRY THUNDERSTORMS. WINDS OCCASSIONALLY WESTERLY IN VICINITY OF RIDGE CREST GUSTING TO 20 MPH.

CHANCE OF DRY THUNDERSTORMS UNTIL TONIGHT.

TOMORROW PARTLY CLOUDY WITH VARIABLE TEMPERATURES, POOR HUMIDITY RECOVERY. MINIMUM TEMPERATURE - BOTTOM 50° AND AT TOP 38°. MAXIMUM HUMIDITY 45%. WINDS VARIABLE, MOSTLY DOWN VALLEY 4-8 MPH AFTER MIDNIGHT. OUTLOOK FOR TUESDAY, PARTLY CLOUDY WITH CHANCE OF ASSOCIATED, MOSTLY DRY THUNDERSTORMS IN AFTERNOON. TEMPERATURES AND HUMIDITY LITTLE CHANCE FROM TODAY.

TO TARGHEE NATIONAL FOREST - AUGUST 7, 1979
FROM NATIONAL WEATHER SERVICE...BOISE IDAHO

DISCUSSION...RED FLAG WARNING FOR WIDELY SCATTERED THUNDERSTORMS THIS AFTERNOON AND EVENING. WEST TO SOUTHWEST FLOW ALOFT WITH WARM UNSTABLE AIR CONTINUING OVER THE AREA.

TODAY...PARTLY CLOUDY WITH WIDELY SCATTERED THUNDERSHOWERS THIS AFTERNOON AND EVENING. MAX TEMP 93. MIN REL 12 PERCENT. WINDS INCREASING DURING THE MORNING BECOMING SOUTHERLY 8 TO 15 MPH THIS AFTERNOON BUT OCCASIONALLY WESTERLY TO 20 MPH ALONG RIDGE CRESTS. HIGHER GUSTS VICINITY THUNDERSHOWERS.

TONIGHT...THUNDERSHOWERS ENDING AROUND MIDNIGHT. MIN TEMPS NEAR TT 55 BOTTOM AND NEAR 40 TOP. MAX HUMIDITY 45 PERCENT. WINDS MOSTLY DOWN SLOPE/DOWN VALLEY 4 TO 8 MPH AFTER MIDNIGHT.

OUTLOOK FOR WEDNESDAY...LITTLE CHANGE FROM TODAY.

END BOISE FIRE WEATHER...

89-4 TARGHEE CLEAR 19-4 10-4

TO TARGHEE NATIONAL FOREST DISPATCH
FM NATIONAL WEATHER SERVICE BOISE IDAHO

SPOT FORECAST FOR GALLAGHER PEAK FIRE
ISSUED 430 AM MDT WEDNESDAY AUG 8 1979

DISCUSSION...SOUTHWEST FLOW ALOFT CONTINUING WITH WARM AIRMASS. MOISTURE CONTINUING TO MOVE NORTHEASTWARD FROM UTAH AND NEVADA FOR SCATTERED THUNDERSTORM ACTIVITY. RAINFALL MOSTLY LIGHT.

TODAY...VARIABLE CLOUDS WITH SCATTERED THUNDERSTORMS MAINLY IN THE AFTERNOON. SLIGHTLY WARMER. MAX TEMP 80 TO 85. MIN RH 40 TO 45 PERCENT. WINDS MOSTLY S 3 TO 7 MPH.

TONIGHT...VARIABLE CLOUDS WITH WIDELY SCATTERED THUNDERSTORMS. FAIR TEMP RECOVERY AND GOOD HUMIDITY RECOVERY. MIN TEMP 50 TO 55. MAX RH 70 TO 90 PERCENT. WINDS BECOMING VARIABLE TO 5 MPH.
END...BOISE FIRE WEATHER

THANKS TARGHEE

55
US FOREST SERVICE
FM NATIONAL WEATHER SERVICE BOISE IDAHO

SPOT FORECAST FOR GALLAGHER PEAK FIRE
ISSUED 345 PM MDT WEDNESDAY AUG 8 1979

DISCUSSION...SOUTHWEST FLOW ALOFT CONTINUING WITH TROPICAL MOISTURE FEEDING INTO CENTRAL AND SOUTHERN IDAHO AND WESTERN WYOMING. MOISTURE DECREASING SLIGHTLY THURSDAY.

TONIGHT...PARTLY CLOUDY TO CLOUDY WITH WIDELY SCATTERED THUNDERSTORMS...WITH SOME WETTING RAIN TIL MIDNIGHT. FAIR TEMPERATURE RECOVERY AND GOOD HUMIDITY RECOVERY. MIN TEMPERATURE 40 TO 45. MAX RH 90 TO 100 PERCENT. WINDS LIGHT DRAINAGE TO 5 MPH EXCEPT GUSTY NEAR THUNDERSTORMS.

THURSDAY...PARTLY CLOUDY WITH ISOLATED THUNDERSTORMS. WINDS SOUTHERLY 10 TO 20 MPH. HUMIDITY A LITTLE LOWER AND TEMPS UP A FEW DEGREES DUE TO LESS CLOUD. MAX TEMP NEAR 85 BOTTOM AND 65 TO MAX TEMP 80 TO 85. MIN RH 15 PERCENT.
END BOISE FORE WEATHER

TARGHEE COPY

B. Mortar Creek Fire.

1. Weather forecasters also underestimated the acutal severity of fire behavior conditions.

2. Based upon weather forecast and the previous 48-hour fire behavior conditions, the Mortar Creek No. 1 fire team appears to have used reasonable judgement in demobing Mortar Creek Fire just prior to blow up situation.

3. Region 8 and 9 crews were well qualified and had excellent attitudes. This is written not to slight the performances of other Regional crews, but to emphasize the point that Eastern crews can be effective in the west.

4. The fire teams made good use of the "best" fire behavior experts.

5. Region 4 assigned one local resource liaison to each out-of-Region fire team. The comments from the fire bosses were that they felt this was well worthwhile and should be incorporated nationally.

6. Made good use of the mobile FAA control tower at Bruch Meadows Back Country Airstrip.

V. ITEMS NEEDING NATIONAL DIRECTION AND/OR EMPHASIS:

A. Fire Policy terminology clarification.

B. Emphasis that states "escaped fire situation analysis" does not contain non-suppression alternative.

C. Inter-agency overhead and crews are still arriving on fires and do not meet fire qualifications and skills standards.

D. Boise Interagency Fire Center procedures:

1. Logistics support group (coordinators) will change direction as shifts change.

(a) Appears to be two ways of doing business (Forest Service and Bureau of Land Management).

(b) Competition is evident between the coordinators. Power struggles tend to confuse the field.

2. Potential conflicts can occur between BIFC Fire Information Staff and Boise National Forest Public Information Staff on large fires in the State of Idaho. This did not occur during these fires; however, the potential is there if the necessary liaison does not occur.

3. National Aviation Management Staff based at BIFC does not appear to be involved in fire suppression/logistics decisions made by BIFC

A REVIEW OF THE MORTAR CREEK FIRE

Prepared By

Al Dunham & Tom Harbour

November 20, 1979

Prior To The Formal Fire Review

Summary: The following report follows the outline in FSM 5194.12 and analyzes the Mortar Creek Fire which occurred on the Challis National Forest July 26 to August 19, 1979, and burned 65,300 acres.

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1. Background Information

a. Meteorological Conditions

Fire weather on the Challis National Forest from the beginning of June to early August was of unparalleled severity. Although never exceeding a -3 on the Palmer Drought Index, the large fuels (1000 h TL FM) on the Forest showed the effects of receiving only 71 percent of normal precipitation in the preceding ten months.

During June, July, and early August the 1978 NFDRS for fuel model G described the most severe fire weather ever recorded on the Forest. The Forest utilizes three weather stations and two 1978 NFDRS fuel models to produce fire danger ratings. The fuel models used are "C" (grass-sage, grass-open timber) at Challis and Little Creek and "G" (dense conifer with heavy accumulation of dead and down) at Bonanza. Indices for 1979 were approximately 5 percent to 30 percent higher than some of the indices recorded during the 1966 fire season (the previous "extreme" year). While the effects of drought on fuel model C are not so clearly pronounced as with fuel model G, above average indices (with the "C" fuel model) existed.

Based on FIRDAT runs received in 1978 and including nine years of data within the period 1967 to 1978, the previously observed maximum burning index was 73 registered on both July 25, 1971 and August 14, 1968. The day the Mortar Creek fire began (July 26, 1979) the actual burning index was 91, some 25 percent higher than previously experienced and indicative that any fire start that particular day would be extremely difficult to contain. During the Mortar Creek fire, an actual burning index of 108, some 48 percent higher than previously experienced was observed. Under these burning conditions the fire burned over 18,500 acres on 8/5 and again on 8/7. This would have to be considered extremely unusual. No visible indications of fire runs of this size exist in the area today. Fire conditions moderated around the 12th of August when widespread wetting rains occurred on the Challis.

Prior to the wetting rains of the 12th of August, no widespread rains had occurred on the Challis since the middle of April. Indeed, isolated thundershowers had delivered only 38 percent of normal precipitation in May 1979 and only 36 percent of normal precipitation in June 1979. The Challis essentially went four months (mid-April to mid-August) without any appreciable precipitation. Moisture on July 22 which resulted in moderated conditions in Eastern Idaho and Western Wyoming, did not extend to the Challis National Forest.

Drought conditions in the Forest's heavier fuels helped to establish and promote the fire, but other weather factors contributed to the significant runs made by the fire from the 2nd of August on. Marine air, which spilled over the Cascades and increased the surface pressure gradient, resulted in 15 to 30 mph west to southwest winds over the fire from the 2nd to the 11th of August. These surface winds, combined with droughty fuels, low

relative humidities (Bonanza 5 percent on 8/3; Indian Creek 7 percent on 8/4), established free burning fire, and unstable atmospheric conditions caused fire behavior seldom seen in conifer fuels.

See Appendix A pages 1-8, for tables relating to meterological conditions.

b. Fuels Conditions

The pre-Mortar Creek fire weather conditions of 1979 yielded extremely dry fuels, with drought being especially evident in the heavy fuels. Heavy fuels are generally considered the fuels about 3" in effective diameter. Fuel moisture in 1000 h TL fuels was approximately 30 percent to 50 percent below normal (see Appendix A, page 9). Fuel moistures, in the estimation of fire behavior officers assigned to the fire, were low enough to justify using values of 2 percent in FBO calculations.

Fuels for the entire fire area have been classified using two different systems, both systems are illustrated on maps in such detail as to be impractical to include in this write-up. The systems are:

1. Rate Of Spread-Resistence To Control, As Prepared For National Fire Planning In 1972. Both Rate of Spread and Resistence to control were classified as low(L), medium(M), or high(H), over the entire Forest. The Mortar Creek Fire started in an area classified as Medium Rate of Spread (MRS) and Medium Resistence to Control (MRC). It immediately spread into an area classified as HRS and HRC. Classification of the burned area is approximately as follows:

Classification	% of Burned Area
HRS-HRC	30%
HRS-MRC	10%
HRS-LRC	5%
MRS-HRC	10%
MRS-MRC	40%
MRS-LRC	5%

2. Albines "Fuel Models" As Classified In 1978.

Classification	% of Burned Area
Model "0" Primarily Barren with few Ground Fuels	5%
Model "1" and "6" Primarily Grass and Sagebrush - less than 1/3 tree Crown Cover	15%
Model "2" Open Saw Timber, 1/3 to 2/3 Tree Crown Cover	30%
Model "8" Closed Short Needle Saw Timber 2/3 plus Tree Crown Cover	30%
Model "9" Closed Long Needle Saw Timber 2/3 plus Tree Crown Cover	20%

The Fire started in an area classified a Model 2.

c. Topographic Conditions

The Mortar Creek fire started from an abandoned campfire immediately adjacent to the west side of the Middle Fork of the Salmon River between the small tributaries of Dome Creek on the south and Artillery Creek on the north. In this area the river runs almost due north through a V-shaped canyon, with a narrow (25'-75' wide) flat on either side.

Elevation at the fire origin is 5,000 ft. The elevation of mountains within a few miles of the river on either side are about 9,000 ft. For example: Artillery Dome is located 2½ miles to the west of the river with an elevation of 9,318 ft. On the east side is Greyhound at 8,995 ft. The maximum elevation where the fire burned was Sheep Mountain at 9,190 ft., the minimum was Mahoney Air Strip at 4,450 ft.

Depending on location in the numerous side drainages, aspect varies from some degree of east on the west side of the river, to some degree of west on the east side. Slopes are generally very steep on either side of the river. The average slope from the river to the ridge top on the west side is slightly less than 50 percent while on the east side, it is slightly over 50 percent. However, on either side of the river, there are large areas with slopes well in excess of 75 percent. Very little of the area burned has slopes of less than 50%.

d. Detection

1. Who Discovered The Fire?

The initial fire report to the Forest Dispatcher was at 1424 hrs. on 7/26 by the observer in the Forest's recon aircraft while flying a scheduled patrol on a normal route. Initial detection was nearly simultaneous by Big Baldy Lookout, Little Soldier Lookout, and the patrol plane. A map location of the fire was turned in by Little Soldier Lookout at 1430 hrs. Shortly thereafter, the recon plane was over the fire and the observer gave an accurate location confirming the fire to be on the west bank of the Middle Fork River in T14N, R11E, Section 6.

2. Did Discovery Meet Standards?

Considering the fire started from a campfire abandoned the morning of 7/25, and discovery was at 1424 hrs. on 7/26, the answer would have to be no.

3. What Was Visibility At The Time Of Discovery?

Visibility was excellent. There was no haze; however, winds were gusty and the air was extremely unstable and rough.

4. Was The Detection System Adequate To Meet Standards?

No! None of the lookouts in the area, manned or unmanned, see into the river where the fire started. Also, air recon of the area is on a once-a-day basis, unless active lightning dictates otherwise.

5. What Would Have Been Necessary To Obtain Faster Discovery?

We believe detection of this fire within standards would have been impractical. Standard dection would have required a patrolman to have been at the site shortly after the campfire was abandoned.

The detection system for the Middle Fork consists of four lookouts: Ruffneck, Big Baldy, Little Soldier, and Loon Creek Point; and three fixed based patrolmen: Dagger Falls, Indian Creek and Little Creek. This system is supplemented by a two man kayak patrol on a weekly trip basis and a recon aircraft. The air recon is implemented during lightning storms, the day after lightning, two days after lightning, and daily during Condition Class II III or higher fire weather.

Even though the fire had been burning over 30 hours prior to discovery, we assume a very small amount of smoke was emitted until it crept some 15 feet through dry litter and began crowning in the low brush adjacent to the river bank. The fire had been in this low brush only a few minutes when it was detected and reported as it was only 10-15 feet in diameter when the patrol plane arrived over it about ten minutes after detection. None of the manned or unmanned lookouts see directly into the river at the fire's origin. Therefore, with the small amount of smoke initially emitted, earlier detection by lookouts would be unlikely if not impossible. We believe the same to be true for air detection as the fire origin was flown the previous day by the Forest recon plane. In addition, the fire origin is passed many times daily by aircraft using Pistol Creek and Indian Creek airstrips and by boaters on the Middle Fork. Both parties are excellent at reporting fires and there were no reports.

Prior to 1979, the detection system previously described, also contained Sleeping Deer Lookout and Simplot Patrolman. These positions were dropped in 1979 due to insufficient funds.

e. Communication

Detector to dispatcher communications were crisp and clear. There were no delays due to communications.

f. Dispatching

1. Did The Dispatcher Obtain Necessary Information?

Yes. The observer in the recon aircraft was highly experienced and gave accurate descriptions and evaluations. He also recognized the major fire potential immediately.

2. Was Detector Information Correlated With Dispatcher And Fire Danger Charts To Justify Initial Attack Actions?

Yes. Prior to 7/26, the Forest had several fires that threatened to become project in size and two fires also located in the Middle Fork Corridor that had become project - Little Loon Creek at 55 acres and Mahoney Creek at 105 acres. Therefore, the dispatchers and the Forest in general were well aware of the critical fire danger. Refer to Appendix A, page 10.

Also, the dispatcher has a pre-planned action map that dictates initial attack action in the absence of the involved District Ranger or F.M.O. It had previously been decided that indicated pre-planned action would be immediately initiated regardless fo the availability of the ranger or F.M.O. The pre-planned action on this day and for this location dictated the immediate dispatch of 1-the Forest's helicopter with crew, 2-retardant, and 3-smoke jumpers. This was immediately done.

For details concerning dispatcher action, refer to the Initial Attack Chronology Chart on pages 10 and 11 of this report.

g. Statistical And Graphic Records

Data asked for in FSM 5194.12--4g is summarized in the various appendices:

(1) Number of fires on Ranger District by man-caused and lightning, size classes, and total areas burned. See pages 11 and 12, Appendix A. Maximum number of fires on high occurrence days. See page 13, Appendix A.

(2) Completed 5100-29, Individual Fire Report. See Appendix C, page 1 and 2.

(3) Display maps:

Fuel Models: Maps are available but detail prevents including them in this report. See explanation on page 2 under fuel conditions.

Damage Class: The Forest was classified into damage classes as follows for National Fire Planning in 1972. Class "1" $250/acre, "2" $500/acre, "3" $1000/acre, "4" $1500/acre, "5" $2000/acre, "6" $2400/acre, and "7" $3000/acre. Except for a few acres classified as "6" adjacent to the Middle Fork, the entire burned area was classified as "2".

Hour Control Zones: The Forest had been classified into the following "Hour Control Zones" for National Fire Planning in 1972:

Zone	% of Burned Area
½hr	15%
1hr	50%
2hr	35%

The Mortar Creek fire started in a ½ hour Control Zone.

Transportation System: The nearest road to the Fire origin was Boundary Creek some 17 miles to the south. The only other access is by trail or by aircraft.

Communications Points: Communications to the point of origin from the dispatch office in Challis was via radio through a repeater located on Artillery Dome. Lookouts that could communicate via radio to the point of origin consisted of Big Baldy, Little Soldier, and Ruffneck.

(4) Map of Burned Area by Period Burned:

This map is available, however, its inclusion in this report is not practical due to the size necessary to indicate the detail. A summary by date and accumulative acres burned follows:

7/26 at 1434	- Detected as a spot	8/5	- 30,360
7/26 at 1534	- 300 Acres	8/6	- 30,802
7/27	- 1100 Acres	8/7	- 49,700
7/28	- 1600 Acres	8/8	- 56,800
7/29	- 2100 Acres	8/9	- 57,000
7/30	- 2250 Acres	8/10	- 59,400
7/31&8/1	- No Change	8/11	- 61,140
8/2	- 3475 Acres	8/12	- 65,300
8/3	- 7038 Acres	No Further Spread	
8/4	-11798 Acres		

(5) Manpower build-up chart by burning periods showing:

(a) Number of firefighters on line duty.
(b) Number of overhead on line duty.
(c) Number of camp and facilitating personnel on duty.

Refer to Appendix A, pages 14 and 15.

(d) Specialized line equipment consisted of 2-7 tractors.

(e) Aerial support.

Helicopter use is summarized on page 16, Appendix A. Note that a maixmum of 26 civilian helicopters flew some 1500 hours on fire, including a maximum of 102 hours on 8/16 (flown by 18 ships that day). In addition, eight military helicopters flew some 271 hours on the fire. Total civilian and military use, including ferry to and from the fire, amounted to about 2,153 flight hours.

Air tanker use reveals 88 loads of retardant were dropped for a total of 183,400 gallons. Maximum use of retardant were the days of 7/29, 8/5 and 8/10. On those days the number of drops and gallons were respectively, 12 for 20,700 gallons, 12 for 28,050 gallons, and 14 for 31,600 gallons.
See Appendix A, page 18 for air tanker use.

(6) Status and location of District initial attack forces on the day the fire started and if manning was in accordance with manning and specific action guides.

The Middle Fork Districts I. A. resources consists of a 2-man crew located at Indian Creek. As this is not indicative of the Districts suppression needs, a brief discussion of the Forests "Fire" Resources is necessary:

Detection - Consists of 7 lookouts, 4 of which see into the Middle Fork Corridor. This is down from 8 lookouts in 1978.

Prevention - Consists of 14 patrolmen and 2 kayak crewmen financed 25% from fire and 75% from recreation. Refer to, page 8, under "Prevention Action" for details.

Initial Attack - Consists of 15 I. A. positions; 6 helitack and 1 helitack foreman at Challis, 4 I. A. at Capehorn, 2 I. A. at Clayton, and 2 I. A. at Indian Creek. It should be noted that most of these positions are financed less than 7.5 pay periods from fire and that total positions have been reduced from 23 in 1976 to 15 in 1979 due to funding reductions.

Support - Consists of 9 positions; 4 District FMO's partly paid from fire, 1 Warehouseman partly paid from fire, 1 Forest Dispatcher and 1 summer Dispatcher, 1 Fuels Specialist, and 1 Staff Specialist.

Due to the limited number of I. A. forces available on the Forest and due to the lack of road access, which dictates dependence on aircraft for initial attack, Forest resources must be assessed for any given situation instead of the specific District involved. Also, this necessitates using patrolmen for initial attack as was the case with the Indian Creek Patrolman (refer to page 8).

For prevention resources available on 7/26, refer to page 8. Initial attack resources available on Forest consisted of 5 at Challis, 2 at Clayton, 2 at Capehorn and 2 at Indian Creek. This was within the direction of the manning and Specific Action Plan. Adjacent Forest resource available consisted of helitack at Garden Valley, smokejumpers at McCall and Boise, and retardant at Boise.

(7) Weather on day of discovery, showing:

(a) Weather forecast for that day.

(b) Predicted or adjusted fire danger rating.

(c) Acutal fire danger rating.

For the above, see page 8, Appendix A.

(8) Weather forecasts and actual fire danger rating for subsequent period:

See Appendix E for weather forecasts.

2. Prevention Action

Prior to the Mortar Creek fire, three other man-caused fires had occurred in the Middle Fork Corridor on the Forest and threatened to become major in size. These fires were:

Name	Date	Size	Suppression Forces
Little Loon	7/8	55A	158 Men
Mahoney	7/11	105A	283 Men
Boundary Cr.	7/15	8A	61 Men

In addition to the above fires, the Ship Island fire was burning along the Middle Fork on the Salmon National Forest forcing the River Manager to close some of the campgrounds within the fire. Also, lightning fire occurrence, throughout the month of July in conjunction with these man-caused fires, seriously extended available resources. (Refer to Appendix A, page 10).

The Forest recognized this situation and considered closing the entire Middle Fork to boaters and the remainder of the Forest to open campfires, etc. This was not done. However, prior to the Mortar Creek Fire, the Forest did ask for and receive additional funds from the Region to increase prevention efforts (nine check stations and eight additional patrolmen).

Besides increased efforts on the Forest, it also should be pointed out that local and regional news media (press and television) were very active at this time with prevention messages, informing the public of the extreme fire danger and the recent man-caused fire occurrences.

While prevention plans are currently revised and are applicable, area prevention funding limits the Forest to a "low-key" prevention program. Such a program is adequate during "normal" years only. Prevention personnel along the Middle Fork of the Salmon River consists of:

- Two kayk patrolmen (paid 20 percent fire and 80 percent recreation), they patrol the river on a weekly trip basis; they had been by the fire origin about 48 hours prior to its detection.

- Three patrolmen (one each at Dagger Falls, Indian Creek and Little Creek), they do contact work in the Middle Fork Corridor; each patrolman was on duty on 7/26, however, Indian Creek was on fire suppression instead of his regular patrol route; his regular route included the fire origin on a twice weekly basis; had the patrolman been on his regular duties, it is possible, but unlikely that detection would have been earlier.

- Patrolmen at Simplot, Marsh Creek and Capehorn were eliminated in 1979, due to lack of funding. It should also be noted that funding of all prevention positions has decreased from 100 percent fire in 1973 to the present 25 percent fire.

  The District has averaged 7.1 man-caused fires per year along the Middle Fork during the period 1970-1978 and 1979 was no different as the District experienced 7 fires along the river.

As far as investigative efforts are concerned, when the fire was reported by the aerial observer, he assumed the fire was man-caused and recommended a fire investigator be ordered. The special agent from Boise drove to Dagger Falls early in the morning of July 27 and floated from Dagger Falls to the origin of the fire. He was at the scene of the fire less than 24 hours after the discovery. Consequently, he was able to determine the fire had started from a campfire abandoned some 30 hours prior to its detection on 7/26 at 1424 hours. As a result of his investigation, the campers who improperly prepared the fire ring and who improperly extinguished the fire, have been identified and citations have been issued.

3. First Phase - Initial Attack

Note: A chronology chart showing major events in the initial phase of the fire follows this write-up.

As soon as the aerial observer sighted the smoke at 1424 hours 7/26, he gave a general location and requested retardant and smokejumpers. Within a short time Little Soldier Lookout had determined an accurate legal description. Initial reports of fire behavior and project potential were made by the observer within ten minutes of reporting the fire. This size up was quick and accurate as was the dispatcher's response in initiating orders.

However, by 1440 hours 16 minutes after discovery, the fire was well established in the crowns, had spotted over an area of approximately 15 acres in size, and was beyond the normal capacity of any initial attack operation the Forest, with the help of the neighboring Forests, could initiate.

The following list indicates the time of order, location of resources, and time of arrival at the fire:

Ordered	Resource & Location	Arrived	Remarks
1426	Helicopter 30 with 3 men - Challis	1458	Could Not Land
1432	Tanker 21 with 2400 gal. - Boise BLM	1515	Ineffective
1432	Lead Plane 1452 - Boise	1515	-
1432	12 Smokerjumpers - Boise	1520	Could Not Jump
1437	Tanker 54 with 2200 gal. - SLC	1620	Ineffective
1437	Lead Plane 32 - SLC	1620	-

T141 from the Boise National Forest was on its scheduled day off. T-58 from McCall was down for repair and T-56 from McCall was working a Wallowa-Whitman National Forest fire.

It is evident the only possibility of successful initial attack would have been to have sufficient manpower (10-15 men) or retardant followed by manpower delivered to the fire within ten minutes after discovery.

It is not practical to locate such resources where delivery time frames such as this can be met. To emphasize that such a time frame would have been necessary: the Mortar Creek fire was 299 acres 51 minutes after discovery, 770 acres in four hours and 1,100 acres by 0200, 7/27; no usual amount of initial attack could have been successful.

CHRONOLOGY INITIAL ATTACK AND FIRST FOLLOW UP ACTION OCCURRENCE

Time	Occurrence
1424	The aerial observer in Cessna 206 aircraft reports fire in the Middle Fork Corridor above Pistol Creek. Little Soldier and Big Baldy Lookouts immediately confirm this sighting. The observer requested retardant and jumpers.
1432	Air tanker (T-21), Boise BLM retardant ship, Boise National Forest smokejumpers, and lead plane ordered from Boise National Forest dispatch.
1436	Three Challis Helitack in a 206B Helicopter (H-30) off Challis, enroute to fire. Helicopter was delayed in get away due to mechanic concluding weekly inspection. It is Challis National Forest policy to make aircraft available for maintenance during daylight hours unless going fires precludes such.
1437	No other retardant ships available in southwest Idaho so air tanker (T-54) from Salt Lake City ordered.
1440	Air observer recommends Forest overhead team be alerted, reports fire is in a chute about 1/4 of the way up to the ridge. He reports fire is in crowns, really moving. Also, he thinks the fire is man-caused and recommends ordering an investigator.
1445	Forest fire staff specialist informs the Forest Supervisor of the situation. Forest Supervisor comes to dispatch office to keep track of situation.
1458	H-30 attempts to land near the bottom of the fire but cannot; the winds are too unpredictable in the bottom of the canyon. He will drop the crew off and go to Vanity Summit to pickup the DFMO. Aerial observer reports fire running vigorously, approximately 50 acres and nearing the top of chute.
1515	Tanker 21 with lead 145Z are over the fire. His drops are ineffective as the fire is too hot. Aerial observer asks for no return on that tanker.
1515	Twenty-man crew from Elk Creek Guard Station on Boise National Forest with sector boss and Boise helicopter (H-10) ordered to Bruce Meadows.
1520	100Z over fire with 12 jumpers. The jumpers think the fire is too dangerous to jump so they will proceed to Bruce Meadows and be available for helicopter pick-up.

1530 Forest fire staff specialist and aerial observer and DFMO agree that a Regional Class I overhead team should be ordered. Fire staff specialist contacts Boise National Forest regarding use of Boise National Forest service net and use of Bruce Meadows as a fire camp. As the Boise National Forest fire staff is also the Fire Boss on the overhead team on call, resource needs were also discussed.

1533 Forest orders airspace restriction from FAA for a five mile radius, up to 11,000 ft. ASL, from the mouth of Rapid River.

1550 Forest Supervisor, Land Use Planner, Fire Staff Specialist have completed the excape fire situation analysis and as a result order:

1. Regional Class I overhead team with communications, plans, and service kits. Also, order an aircraft for the air attack boss.

2. Fire investigator.

3. Three additional 20 man crews (makes 4 total).

4. One heavy helicopter (BIFC 212) (makes three total).

5. Procurement team.

6. FIO.

1610 Forest orders frozen food heaters and 150 meals plus 100 man camp plus one 20 man camp crew. Forest Law Enforcement Coordinator makes contact with special agent in Boise to arrange for investigation.

1612 DFMO is in H-30 over fire. He reports no way to get people on the top or bottom of the fire. The fire extends from Dome Creek to Artillery Creek, with spot fires in Artillery Creek. This negates the intent to ferry the smokejumpers and the crew from Elk Creek to the fire that evening with helicopters.

1620 Air tanker (T-54) and lead plane 32 from Salt Lake City are over the fire. The drops are ineffective. Winds are too high and fire is too hot.

1735 Challis National Forest sends a 100 man camp with a 10 man camp crew to Bruce Meadows.

1834 Aerial observer reports fire is very hot on the south side of the fire. He also reports the fire has spotted across the Middle Fork and is now on the east side of the river.

2000 Forest Supervisor and Forest Fire Staff Specialist meet with Region 4 Team "A" to brief them on the suppression objectives for the fire.

4. Second Phase - Reorganization To Control Fire

a. Was An Experienced Fire Boss Ordered?

Yes. At 1500 hours on 7/26, a Class I R-4 fire overhead team was ordered to report to Bruce Meadows.

b. Did Dispatcher Anticipate Needs And Line Up Necessary Resources?

Yes. Prior to ordering the on-duty overhead team, the Challis Fire Staff Officer contacted the Fire Boss and briefed him on the situation. As Bruce Meadows is located on the Fire Boss's home Forest (Boise) the necessity of using it for base camp was discussed. Also, the necessity of using the Boise National Forest service net and locating the procurement team with the necessary support forces in Boise was discussed. The Fire Boss was informed of resources already ordered. Resources that had been ordered or were to be immediately ordered were: Overhead Kits, Helicopter Kits, Three Helicopters including the BIFC 212, Light Aircraft for Air Attack Boss, Three Retardant Aircraft, Fireline and Service Radios, Fire Investigator, Procurement Team, Fire Information Officer, Air Space Restrictions, 100-Man Camp plus the Challis 100-Man Camp, Breakfasts and Lunches for 150 Men, 20-Man Camp Crew, Four 20-Man Fire Crews and I. R. Flight.

c. After Arrival Did Team Make Adequate Size Up?

The reader must realize that two different occasions are being addressed in this portion of the analysis. First: When R-4 Team "A" initially arrived on 7/26 and, Second: When Team "A" arrived back on the fire on 8/2 after the fire had been controlled, then blew-out on the Forest's mop-up crew earlier in the day of 8/2. (Refer to "Summary of the Mortar Creek Fire on pages 3-5, Appendix C.)

Team "A" arrived at Bruce Meadows the first time during the evening of 7/26. Estimates of fire growth was provided by individuals from the Challis and by aerial recon by team members. The team size up and anticipation for required resources was accurate. The limiting factors were the quick availability of helicopters and the necessary locations of the base camp at Bruce Meadows, some 25 miles from the fire.

At 1500 hours on 8/2 after having been released from the fire on 8/1, the Fire Boss was called by the Forest's Fire Staff who requested that he, his line team, and his air service unit return to Bruce Meadows as the fire had blown out in Greyhound. It was the fire staff's belief that the fire would run to the top of the ridge between Greyhound and Hardscrabble and lay down sufficiently during the evening for jumpers and retardant to be effective that evening or early the next morning, thus allowing a few crews to pick the blow out up. By the time the Fire Boss looked at the fire at 2000 hours, it was well established in Hardscrabble Creek and would obviously require a major suppression effort. He then ordered the remainder of his team and other necessary resources. His assessment of a major suppression effort being required was accurate.

1. Did the team's plan adequately reflect existing conditions and

available resources?

All teams appeared to recognize that most existing factors were such as to make the suppression effort extremely difficult. For example: a)topography-extremely steep and rugged, located in and adjacent to the Idaho Primitive Area; b)weather-some of the worse burning conditions too have occurred on the Challis National Forest for which fire weather records exist; c)fuels-the fire was burning primarily in heavy timber, many areas with heavy bug kills and large quanities of down and standing dead timber; the 1000 hr. fuel moistures were at record or near record lows; d)access-difficult as any in the continental United States; nearest suitable base camps were Bruce Meadows - some 25 miles from the fire and Loon Creek Airstrip, which served as the Loon Zone Base, some five miles from the fire, after the fire had spread some 15 miles from its origin. It should also be pointed out that road access to Loon Creek Airstrip from highway 75 is some 35 miles and three hours by two ton or smaller vehicles. Road access to minor portions of the fire did exist after the fire had reached its maximum size; however, this access was primarily limited to four wheel drive vehicles with travel being slow and dangerous.; and e)resources available-especially limited in the early stages of the fire due to numerous fires in the Region and in the Western United States.

The Forest believes the fire teams involved and GHQ did an adequate job of planning. In spite of the adversities listed and prior to rain on 8/12, effective action had been taken on the toe and both flanks of the fire. This fire was burning an average of 5500 acres per day with daily maximums of over 18,000 acres. The implementation of their plans required the installation and support of some 15 spike camps and some 1500 helicopter flight hours. These plans were implemented without a fatality, permanently disabling injury, or serious helicopter accident.

2. Did teams estimate size by 1000 next day?

Estimates were made on 7/26 by the Forest in the Escape Fire Situation Analysis, which is in Appendix C, pages 6 and 7. Thereafter, estimates were made by the fire teams involved. Some of these estimates are on record in the files.

3. Did the teams estimate resource needs for control?

Calculations were made by each team for resource needs. Some of these calculations are on file in the fire records.

4. Were plans based on scouting information?

By necessity, helicopters were used extensively for scouting. Also, local knowledge and on-the-ground scouting and infrared photography was used.

5. Did teams set up efficient and balanced organizations?

Shift plans prepared by each team indicates that sound organizations were quickly set up and responsibilities designated.

6. Were fire weather forecasts obtained?

A fire weather forecaster was located at Bruce Meadows and Loon Zone. In addition, each team had a fire behavior officer. Forecasts are attached to each shift plan. Generally these forecasts were accurate.

7. Did teams establish adequate camp locations?

Location of the base camps at Bruce Meadows for the Bruce Zone, and River Zone and Loon Creek Airstrip for the Loon Zone was recommended by the Forest. The location for some 15 spike camps were selected by the team involved - in some cases with local input. These spike camps by necessity were established early, depending on the location of the fire.

8. Were operations timed adequately?

Each team had a schedule for meals, completion of shift plans, shift changes, etc. This schedule was probably adequate. However, the ability to carry out schedules was dictated by aircraft available and weather conditions. Helicopter availability was problem throughout the early stages of the fire. Also, there was considerable helicopter down-time. During the latter stages of the fire weather conditions (fog) limited helicopter operations. This made schedules impossible to adhere to on several occasions.

9. Were accomplishments satisfactory? Was line completed and burned out?

During the initial phase of the fire (7/27-7/31) accomplishment was excellent and very impressive and what line could be burned out, was. However, after 8/2, accomplishment reflected the extreme fuel, topography and weather conditions, while later it was obvious that some crews and overhead needed rest. Again, line was burned out where possible or necessary.

10. Were safety measures applied?

Again with the conditions that existed, the man days spent (2365 people maximum), the type of roads driven and the aircraft involved, there were no fatalities, disabling injuries or serious helicopter accidents.

11. Did the teams adequately consider costs and values?

Any fires burning in fuels, locations and under conditions such as this fire, will be extremely expensive to suppress. The Forest believes the involved fire teams did consider costs, but the decision, as expensive as it was, to suppress the fire was basically made by the Challis National Forest and is documented by the Escape Fire Situation Analysis.

12. Was early liaison established with cooperators?

No cooperating agencies were involved. However, there was excellent coordination with property owners (Pistol Creek, Thomas Creek, Falconberry, and Loon Creek) whose property was threatened by the fire.

d. Were Resources Requested By The Teams Furnished Within Specified Time Limits?

This was an impossibility in many instances. Some resources were not available when requested, or if available, their location and the logistics required, precluded timely delivery. Also, as with any operation of this magnitude, there was some confusion and mix up with delivery of resources and supplies. The service wide shortage of large helicopters did limit the fire teams options.

e. Were Teams Competent And Did They Redeem Their Responsibilities?

The Forest believes that each of the four teams involved were competent and redeemed their responsibilities.

f. What Mistakes Were Made?

The decision to demobilize the fire on 7/31 and turn the mop-up back to the Forest on 8/1 at 1200 hours may be construed as a mistake in view of the events that occurred on 8/2. However, this decision was recommended by a Class I Team after considering existing conditions and forecasts. It was approved by the Forest after a helicopter recon of the fire with the Team's Line Boss and after discussing the conditions and forecasts with the team.

In view of the burning conditions during the period 7/27 through 8/1 (refer to page 5, Appendix A), and considering the weather forecasts (page 5, Appendix D), and the qualifications of the people involved, the Forest believes the plan, agreed to by the team and the Forest, and implemented by the Forest, was prudent and reasonable.

Refer to Appendix C (Summary of Mortar Creek Fire) for resources listed in the mop-up plan.

g. Why Did The Team Fail To Control The Fire During The First Burning Period?

No effort was made to control the fire during the first burning period. In any event, it would have been impossible, considering available resources, logistics, and conditions. Also, the Forest Service Fire

Suppression Policy no longer requires control during the first burning period, nor was such a control time addressed by any of the options considered in the "Escaped Fire Situation Anaylsis".

5. Third Phase - Major Control And Organizational Problems

a. Calculation Of Probable Behavior And Location Of Fire At Successive Intervals.

Again, consideration must be made of two different occurrences. One, the Mortar Creek fire from 7/26 to 8/1 and two, the fire from 8/2 to 8/19. During the 7/26 to 8/1 period, the fire behavior was "normal" for a project fire except for the initial run. Behavior and spread was well predicted and normal methods or calculation were adequate. During the 8/2 to 8/19 period, most especially 8/2 to 8/11 the behavior of the fire was dominated by massive fire fronts and long range spotting (up to four miles). No method currently exist for adequately predicting rate of spread for this type fire. The Class I Teams assigned the fire all had qualified Fire Behavior Officers on the teams, and all had several highly experienced individuals usually capable of making accurate projections of rates of spread.

b. Calculation Of Resource Needs.

During the first phase of the Mortar Creek fire (7/26-8/1) these calculations were accurate. Resource orders and shift plans were based on them. Also, the prompt initial control was made based on these calculations. Refer to Appendix B for a copy of R-4 team "A's" calculations, prepared by the Plans Chief.

During the second phase of the fire these calculations were made, some of which are on file. Also, resource orders were probably based on them. However, the availability of resources, logistics, and extreme fire behavior were probably more reflected by shift plans and action taken than were these calculations.

c. Organization And Distribution Of Overhead, Manpower And Equipment At Successive Time Intervals By Secotrs, Divisions, Etc.

In the first phase of Mortar Creek, the fire on the west side of the river was attacked first. Resources and equipment were channeled with this objective in mind. After control on the west side, the east side of the fire was attacked. During the second phase of Mortar Creek, the fire initially was running so fast that the strategy was to hold the toe and take flanking action while abandoning the head of the fire until burning conditions moderated. Priorities established by the Forest and GHQ for distribution of manpower at the time the fire was making major runs was as follows: #1. Protect life and property; #2. Keep the fire off the west side of the river; #3. Tie in the toe and flank of the fire and abandon the head until conditions moderate.

Later, when the fire assumed a relatively stable status, divisions and sectors were established by zone around the fire. At the peak of manpower there were three zones, twelve divisions, and 25 sectors on the fire. This organization was then scaled down as the fire assumed a contained and finally controlled status.

d. Mobilization Of Forces- Was It Sufficient As To Strength, Timing, Supervisory Personnel, And Equipment?

There were no problems with mobilization of forces during the first phase of Mortar Creek. There were problems, however, during the second phase of Mortar Creek. On the fourth of August several other fires in Idaho and Montana escaped and a critical shortage of resources developed in Region 4. As these fires continued to roll, a shortage of resources developed in the entire west. Indeed, BIFC went from a Plan II state of readiness on August 4 to Plan IV August 5 through August 10. Also, a ROCO organization was set up in the Regional Office in Ogden on 8/7. With the shortage of available manpower, several orders for crews and equipment made early in the second phase of the fire were delayed. When category II crews began arriving from the east, however, manpower needs were filled.

A continuing item of concern in the mobilization of equipment is the availability of heavy helicopters. Some orders for heavy helicopters on the Mortar Creek fire were never filled. Military helicopters helped alleviate some of the shortage on the Mortar Creek fire.

It should also be noted that the National Guard furnished equipment to the fire that was in short supply elsewhere. National Guard resources on the fire were significant and cooperative; see Appendix A, page 17 for a list of resources on the fire as of 0800 August 9.

e. How Was Scouting Done? Was It Adequate And Efficient?

Several methods of scouting were utilized on the Mortar Creek fire. These included:

1. On the ground scouting.
2. Aerial reconnaissance.
3. Use of infrared imagery.
4. Use of local knowledge.

On the ground scouting consisted mainly of intelligence officers and general scouts assigned to the plans functions. These people were generally given a designated assignment by the Plans Chief or Fire Boss and reported on these assignments.

Aerial reconnaissance consisted of scouting done by command, plans, line, and service personnel.

Usually this reconnaissance was done by helicopter. Scouting in this manner gives primary fire team personnel a better "feel" for the fire and helps maintain the efficacy of strategy and tactics.

Infrared imagery was used to great advantage on the Mortar Creek fire. During the first phase of the fire, IR photos showed a spot fire more that one mile outside the line, which was found and successfully extinguished early 7/28; without imagery this spot may have developed to a point it could have caused problems. Infrared imagery was also an excellent scouting tool during the second phase of the Mortar Creek fire. During this phase, imagery was used to establish perimeter and to locate hot spots, both within and outside the line. Persistent smoke

problems throughout the five increased dependence on imagery for reliable information.

f. Fire Camps - Location And Adequacy.

During the first phase of the fire, one main base camp at Bruce Meadows was established along with three locations, which were used as spike camps. These spike camps also were designated helispots and served as centralized points near or within the fire for disbursing troops, supplies and equipment. Spike camps were established with efficiency in mind and were the focal points of activity on the fire. The Bruce Meadows camp served as a base of supply and a headquarters for strategy.

During the second phase of the fire, there were (at the peak) two main base camps and 15 spike camps. Both the River and Bruce Zones had their main camps at Bruce Meadows. Again, the Bruce Meadows location served as a base of supply and headquarters for overhead. The main camp for the Loon Zone, which served a similar function, was established near the Loon Creek Airstrip. It again must be emphasized that spike camps served as the main hubs for troop movement, while base camps supplied the spike camps. The 15 spike camps were located strategically to allow for maximum efficiency in the firefighting effort.

g. Accomplishment By Method

Held fireline consisted of:

86	miles of handline (mostly direct)
6	miles cat line (mostly indirect and burned out)
18	miles of cold trail
10	miles of river
120	miles total held line

In addition, some ten miles of indirect cat line were constructed and not needed due to the rains on 8/12.

Many miles of handline were constructed and lost in Dome Creek, in Greyhound Creek, in Hardscrabble Creek, in Mahony Creek and on Sheep Mountain. In most instances, manpower was too thin to hold the constructed lines. However, in several instances, even with significant holding crews on line, extreme fire behavior caused spotting and loss of line. The dry fuels and extreme conditions necessitated considerably more holding crews than normal.

h. Why Did Plan Of Attack Fail?

During the first phase of Mortar Creek (7/26-8/1) the plan of attack did not fail. It was the mop-up plan that failed as previously explained. During the second phase of Mortar Creek, the plan of attack recognized that control would only be after burning conditions moderated. Conditions moderated on 8/12 and by 8/16, the fire was contained.

i. Effectiveness Of Labor. Did Morning Crews Get On The Line By Daylight And Night Crews Before Dark? Were They Adequately Supervised And Directed? Was The 16 Hour Limitation Exceeded (FSM 5132.1--5)? Was Production Adequate?

Effectiveness of Labor

Labor spent was effective except for the handline constructed and lost, and the tractor line constructed and not required as explained in item 5.g. of this analysis. Regarding the handline constructed and lost, it should be noted that additional crews were unavailable during these periods. This necessitated moving existing crews as priorities changed due to rapid fire spread, which in turn, caused or increased shortage of holding crews. In addition, crew labor was also effected by the logistics limitations as explained later under "Shift Changes and Lengths".

Shift Changes and Lengths

Generally speaking, crews were based in spike camps on or near the fireline. This allowed maximum production per crew day while making reasonable shift lengths and efficient shift changes possible. However, there were times when conditions dictated shifts in excess of 16 hours, and prevented efficient shift changes.

Fast running fire and the unavailability of additional crews necessitated constant movement of existing crews between spike camps. This dictated constant change in support resources and supplies needed at these camps. Also, some crews located at spike camps were still dependent on helicopters for access to and from the firelines. These factors made for heavy and complicated logistic schedules with a limited helicopter force. When combined with smoke and weather conditions, there were times when logistic requirements could not be met. This was not only detrimental to shift length and changes, it was also detrimental to labor effectiveness and crew production.

Were crews adequately supervised and directed?

Overall, supervison was adequate. However, some crew bosses and sector bosses were inadequate for the type of fire that existed during the critical stages of Mortar Creek. This inadequacy appeared to be due primarily to lack of experience.

Was production adequate?

Overall, production from crews on the Mortar Creek fire was adequate. There were some excellent crews and some that were unsatisfactory, both physically and in their performance. Specifically, some SRV crews were ill-equipped, poorly trained and the physical fitness of some members was questionable. This was documented by performance ratings. Also, as is the case when there is a major bust of fires that includes several Regions, some crews when released from hot fire line duty elsewhere, were sent directly to Mortar Creek. Conditions at Mortar Creek precluded adequate performance from tired crews.

j. Effectiveness Of Specialized Equipment.

Specialized equipment consisted of tractors and a A.G.A. thermalvision equipped helicopter.

Tractors constructed the bulk of the line from Greyhound Mountain across Rapid River to Sheep Mountain. Without this line, a major portion of the Upper Rapid River drainage would have burned. The machines and their operators were a necessity in limiting the fire size. Also, the machines and their operators performed satisfactorily.

The thermalvision helicopter proved to be an asset in locating hot spots for mop-up crews. The pilot and the thermalvision operator were skilled and cooperative.

k. Adequacy Of Mop-up, Patrol And Demobilization.

Mop-up and patrol was inadequate during the first phase of Mortar Creek as previously explained. However, subsequent mop-up and patrol was adequate. Also, demobilization appeared satisfactory.

1. Were Safety measures adequate?

As previously stated, considering the resources involved, and the conditions existing, safety measrues must have been adequate. A summary of accidents reported indicate:

218 - Required first aid treatment

100 - Required medical treatment & resulted in lost time
318 TOTAL

This total includes 96 medivacs.

6. Line Officer Participation

Line Officer participation in the Mortar Creek fire began approximately 21 minutes after the fire was reported on 7/26. At this time (1445 hours, 7/26), based on the observers comments, the forest fire staff specialist assumed a project fire was in the making and alerted the Forest Supervisor. From that time on, the Supervisor or his acting, was directly involved in all major decisions regarding the fire. The Forest Supervisor helped prepare the escaped fire situation analysis approved ordering a Class I team, approved zoning the fire, approved demanning the fire, and was involved with the approval of basic strategy.

At the outset of the fire, the Supervisor and his fire staff specialist met with the Fire Boss at Bruce Meadows and informed him as to the direction he was to take in suppressing the fire. He then made sure either himself or his representative were kept informed each day of new developments on the fire.

When the fire was zoned, the Ranger of the Middle Fork District served as the Resource Advisor on the Loon Zone. He assisted the out of Region team with contacts, decisions and the media.

Overall, there was a great deal of line officer participation in the Mortar Creek fire.

7. Performance Of Overhead

Four different Class I overhead teams were used on the Mortar Creek fire. The following table shows the involvement of each:

Date	Team	Fire Boss	Zone
7/26-8/1	R-4 Team "A"	G. Stevens	No zones
8/2-8/6	R-4 Team "A"	G. Stevens	No zones
8/7-8/9	R-4 Team "A"	G. Stevens	Bruce
8/7-8/14	R-3 Team	J. Wagenfehr	River
8/7-8/19	R-6 Team	W. Jones	Loon
8/9-8/19	R-4 Team "B"	K. Dittmer	Bruce
8/19-8/22	R-4 Team "A"	G. Stevens	All zones

There was also one GHQ organization involved with the fire. This organization was intact 8/5 to 8/19 and consisted of the following primary personnel.

Dick Leicht - GHQ Fire Manager
Hugh Pangman - GHQ Plans Coordinator
George Roether - GHQ Service Coordinator

The Class I Teams met the criteria of the National Fire Training and Qualifications System, and performed satisfactorily as did the GHQ organization.

8. Effect Of Suppression Action On Environment

The Mortar Creek fire began inside the Idaho Primitive Area (IPA) and burned, almost exclusively, acreage considered either primitive area or wilderness study area. A breakdown by area would be as follows:

12,500 acres inside IPA) 61,000 acres within
48,500 acres inside Study Area) River Of No Return
Wilderness Proposal

4,300 acres outside IPA & Study Area

Due to the political sensitivity of these lands, and in accordance with policy, a resource advisor was assigned to the fire immediately and remained with the fire until its control. The resource advisor remained at fire camp and was available for consultation on all aspects of environmental impacts. Due to the sensitivity of the area, possible environmental damage was considered in strategy and tactics.

Firelines, spike camps, helispots and other facilities were located and constructed in such a manner as to minimize impacts on the environment. In the opinion of Soil Conservation Service experts from Boise, handlines will naturally seed-in with native grasses within two years. To minimize erosion, handlines were waterbarred. In the opinion of these same experts, tractor lines will naturally seed-in within 2-4 years.

Tractor line was constructed in both the Bruce and Loon Zones of the Mortar Creek fire. Approximately 16 miles of tractor line were constructed. Constraints were placed on tractor use by the Forest Supervisor. These constraints included:

1. No road construction in the IPA or the adjacent study area.

2. Maintain minimum width necessary and locate lines strategically to minimize impacts.

3. Keep the Forest Supervisor informed as to the number, type, and location of tractors.

As a result of these constraints, only 1½ miles of tractor line were constructed inside the proposed inclusion to the River of No Return Wilderness proposal. The remaining 14½ miles of tractor line was either along boundary lines or outside the proposed inclusion.

Rehabilitation work on tractor lines began 5 days before the fire was controlled. Approximately 140 hours of tractor time were expended in rehabilitating the line. This consisted of pulling berms, waterbarring, and drawing debris into the line. This amounted to almost 9 hours of tractor time per mile of cat line.

Dust problems were abated on the road from highway 21 to Bruce Meadows by applying DO4 dust oil. In camp, problems were abated with wood chips and water. Problems on several miles of dirt roads and at base helispots were abated by water from tank trucks. Problems at helispots were abated with water pumped from nearby streams where possible. Otherwise, abatement on helispots was by applying water by helibucket.

9. Financial Management

a. Summary Of Costs.

		% of Total
1. Base Pay	$ 630,913	10.95%
2. Overtime	2,015,069	34.98%
3. Wages (FFF)	439,030	7.62%
4. Travel	255,067	4.43%
5. Transportation	861,255	14.95%
6. F. S. Equip. Rental	34,614	0.61%
7. Other Equip. Rental	96,697	1.68%
8. Food	240,936	4.18%
9. Equip.-Including Losses	180,918	3.14%
10. Aircraft	1,005,482	17.46%
TOTAL	$5,759,981	100.00%

b. Aircraft Costs And Use

1. Lead Planes - Fire records are inadequate for breaking out use and cost information on these aircraft. After-the-fact information from the various units involved specify costs only, and do not break out hours flown or for what purpose. It is known that three different lead planes were used. An estimate based on retardant used and use records of R-4 aircraft is 50 flight hours. Costs are included in total aircraft costs.

2. Reconnaissance - Again, fire records are inadequate for an accurate determination, and again, costs are included under those for total aircraft use. An estimate of recon flight time based on existing records is:

Fixed Wing - including air attack	-	97
Helicopter	-	165
TOTAL		262 Hours

3. Air Tankers - Again, records are inadequate for an accurate determination of flight hours. However, tanker base records indicate that eight different tankers delivered 88 loads of retardant to the fire for a total of 183,400 gallons. Estimated flight time is 175 hours. Costs are included under total aircraft costs.

4. Helicopters - Records indicate that 26 different contract helicopters and 8 different military helicopters for a total of 34 were used on the Mortar Creek fire. Total flight time on a per/day basis was kept for each zone except on the military helicopters. However, some of the day records are missing. A determination of flight hours therefore involved estimating flight time for the missing days and using military records for the military aircraft.

Total estimated flight time on the contract helicopters including ferry to and from the fire amounted to 1780 hours. Total flight time on the military helicopters from military records amounted to 373.5 hours. Total flight time, military plus contract amounted 2153.5 hours.

Records concerning the amount of cargo, retardant, and personnel transported for the most part do not exist. However, an evaluation and projection-by-percentages of the records that do exist indicate the following:

Contract Helicopters

Total on Fire Flight Time		-	1500 Hours
Ferry to & from Fire		-	280 Hours
			1780 Hours
% on Fire Flight Time to Cargo	38%	-	570 Hours
% on Fire Flight Time to Personal Transportation	45%	-	675 Hours
% on Fire Flight Time to Recon	11%	-	165 Hours
% on Fire Flight Time to Medivac	2.5%	-	37.5
% on Fire Flight Time to Water Drop	3.5%	-	52.5
			1500 Hours

One zone kept records as per hours flown in relation to personnel, cargo, etc., transported. Although not entirely applicable, an estimate of cargo, personnel, etc., transported based on these records follows:

Cargo	570	hrs.@	1500 lbs. cargo per hr.	=	855,000 lbs.
Personnel	675	hrs.@	17 personnel per hr.	=	11,475 pass.
Water	52.5	hrs.@	650 gals. per hr.	=	33, 125 gals.

Military Helicopters

As previously stated, the only available records are from the military and these did not include cargo transported. We know that passengers were not carried. However, notes from the GHQ Air Coordinator indicates the military was transporting an average of 15 tons of cargo per day. Actual on fire days of operation consisted of 7 days. At 15 tons per day this would amount to 105 tons or 210,000 lbs for a grand total of nearly one million pounds of cargo transported by all helicopters.

5. Other Aircraft Use - No records are readily available for a determination of other aircraft use. This would be substantial as most of the workers involved with this fire were delivered at least to Boise and in some instances to the airstrip at Bruce Meadows by aircraft. Costs should be included under total aircraft costs.

c. Shift Lengths

Shift lengths varied depending on circumstances as explained in Item 5i page 19 of this analysis. Infact, some workers exceeded 20 hours in a shift although not on a planned basis. An evaluation of shift plans indicates an average planned shift length of 13 hours.

d. Procurement

1. Equipment Purchases - As far as is known, equipment purchased was needed and used.

2. Equipment Rental - We are not aware of equipment that was used prior to the completion of rental agreements, however, coordination between contracting officers and the on the ground administration was inadequate as was pre and post use inspections.

3. Food - Considerable food was on hand after the major demobilization of the fire and had to be given to schools, etc., or otherwise disposed of. This was due to heavy and unpredicted rain dictating major demobilization long before even the most optimistic hopes.

4. Local Business Establishments - The bulk of the purchases for the Mortar Creek fire was from businesses located in Boise with only a minor amount from Challis. Purchasing was in such quantity that Boise businesses were caught short on occasion.

e. Timekeeping And Record Keeping

1. Fire Time Reports - In some instances, fire time reports were incomplete. Examples: 1. did not specify casual or regular Forest Service employee; 2. did not specify home Forest; 3. did not give addresses on casual employees; 4. did not list social security numbers on casual employees; and 5. did not follow a standard procedure for submission of casual fire time

reports to NFC.

2. Commissary - The records for two zones are complete and acceptable. However, the records for the third zone is missing. Out of $24,500 commissary some $3,400 worth is unaccountable for. Fire time reports from the third zone will be checked to tie down the $3,400 worth of commissary. The commissary records are missing, but it appears that items were charged off on individual fire time reports.

3. Compensation - In all cases, form CA-16 and CA-1 were issued for illnesses instead of the correct forms CA-20 and CA-2. In some job related injury cases, forms CA-16 and CA-1 were incorrectly completed or not fully completed.

4. Equipment Use - In some cases, daily shift records were not promptly completed.

5. Claims - In some cases, there was inadequate documentation to support personal property claims for fire employees. This included witness and supervisor statements. The result was serious delay in compensation in several instances.

6. Orders - Fire order procedures appeared adequate.

7. Receipts - We assume that receipts for all orders delivered to fire camps should be signed when received by the service organization. This was not done in all instances. Long after the Mortar Creek fire the Forest was being asked to sign as received, numerous computerized manifests for orders from BIFC.

Also, when supplies or equipment is sent back to BIFC, there should be a manifest signed by BIFC. This was not done.

8. Property Accountability - We do not know whether property accountability on the fire was adequate or not. However, we are unaware of any major problems in accountability.

MORTAR CREEK FIRE APPENDIX

LITLE CREEK FLI

Date	1979	Max.	Min.	Average
7/8	23	43	12	21.00
7/9	Missing	35	11	20.37
7/10	27	43	1	21.00
7/11	21	33	7	22.56
7/12	Missing	29	8	20.44
7/13	24	33	4	21.89
7/14	21	29	8	19.00
7/15	23	28	11	20.22
7/16	26	45	7	20.89
7/17	26	35	6	23.44
7/18	27	34	1	20.89
7/19	32	42	6	21.56
7/20	32	29	10	18.56
7/21	37	38	4	24.00
7/22	32	38	13	22.33
7/23	41	35	9	21.33
7/24	49	44	3	23.89
7/25	50	44	8	24.89
7/26	44	56	7	24.33
7/27	Missing	48	11	25.78
7/28	33	66	12	27.33
7/29	31	43	4	29.33
7/30	42	46	6	24.56
7/31	42	47	7	26.67
8/1	35	40	2	23.44
8/2	42	50	6	30.00
8/3	51	48	4	25.11
8/4	66	48	5	25.56
8/5	41	53	0	28.44
8/6	Missing	46	10	27.44
8/7	Missing	50	2	25.22
8/8	31	41	2	22.56
8/9	30	61	7	26.11
8/10	31	85	11	31.11
8/11	32	88	11	32.56
8/12	0	70	13	35.11
8/13	0	53	6	31.00
8/14	15	54	7	30.22
8/15	17	59	1	28.33
8/16	19	63	3	31.75
8/17	17	61	5	29.57
8/18	15	47	4	26.00
8/19	1	58	2	25.67
8/20	15	53	1	25.33
8/21	14	66	5	27.56
8/22	16	68	1	27.56

LITTLE CREEK BI

Date	1979	Max.	Min.	Average
7/8	30	61	17	27.71
7/9	Missing	50	6	25.75
7/10	37	54	2	27.33
7/11	29	46	7	29.00
7/12	Missing	41	0	24.22
7/13	34	46	3	29.56
7/14	30	40	6	24.78
7/15	32	39	10	26.89
7/16	36	44	7	25.67
7/17	37	49	6	31.11
7/18	35	47	0	27.11
7/19	38	58	5	28.22
7/20	38	40	6	22.78
7/21	39	53	6	27.44
7/22	28	53	9	27.78
7/23	57	49	11	28.00
7/24	68	62	0	30.67
7/25	70	61	10	33.67
7/26	58	49	10	27.67
7/27	Missing	46	15	29.00
7/28	45	48	17	28.22
7/29	43	57	0	35.56
7/30	55	46	5	30.22
7/31	58	66	8	33.78
8/1	49	56	0	26.89
8/2	59	68	7	36.50
8/3	71	50	4	30.89
8/4	92	81	5	34.22
8/5	56	75	0	35.11
8/6	Missing	64	0	31.22
8/7	Missing	70	0	34.44
8/8	43	57	0	30.67
8/9	38	67	7	33.89
8/10	41	70	12	36.78
8/11	42	73	12	38.89
8/12	0	78	12	44.00
8/13	0	74	5	39.89
8/14	20	72	0	33.89
8/15	21	82	0	35.67
8/16	25	77	3	42.12
8/17	22	76	5	39.57
8/18	19	66	0	32.78
8/19	0	68	0	33.44
8/20	27	66	0	33.11
8/21	18	72	6	35.33
8/22	21	84	0	36.44

BONANZA ERC

Date	1979	Max.	Min.	Average
7/8	57	55	31	42.00
7/9	Missing	57	34	44.71
7/10	62	54	15	38.37
7/11	Missing	56	24	39.12
7/12	Missing	47	25	38.50
7/13	58	49	28	39.62
7/14	56	42	34	40.75
7/15	Missing	53	35	43.00
7/16	59	56	35	44.25
7/17	60	51	21	40.63
7/18	62	57	25	42.12
7/19	61	59	27	41.75
7/20	61	60	33	41.50
7/21	61	61	31	43.00
7/22	29	62	21	42.00
7/23	54	62	30	43.62
7/24	58	64	14	40.87
7/25	59	64	20	44.12
7/26	62	64	24	46.12
7/27	60	65	29	48.25
7/28	58	64	35	48.25
7/29	63	64	37	48.87
7/30	64	65	30	44.71
7/31	65	66	30	47.12
8/1	68	65	33	46.50
8/2	70	65	41	47.29
8/3	74	66	36	44.62
8/4	73	65	37	46.75
8/5	71	64	33	45.12
8/6	73	66	32	45.12
8/7	72	69	23	42.50
8/8	65	67	34	43.87
8/9	67	56	39	44.37
8/10	70	59	37	44.71
8/11	71	54	40	46.50
8/12	24	57	41	47.62
8/13	5	57	39	48.14
8/14	28	55	40	46.12
8/15	34	55	31	44.00
8/16	35	57	30	46.29
8/17	32	54	28	42.33
8/18	20	52	19	41.62
8/19	16	52	23	41.75
8/20	28	55	25	40.37
8/21	25	59	28	42.37
8/22	32	60	17	40.63

BONANZA FLI

Date	1979	Max.	Min.	Average
7/8	57	39	20	25.17
7/9	Missing	42	20	28.57
7/10	46	36	20	25.12
7/11	55	37	16	25.50
7/12	Missing	41	13	28.50
7/13	47	41	18	27.37
7/14	36	35	22	27.37
7/15	46	31	24	28.13
7/16	41	50	17	30.25
7/17	44	38	24	28.62
7/18	40	48	17	29.12
7/19	35	38	17	24.37
7/20	41	38	20	28.37
7/21	37	37	18	27.00
7/22	13	32	13	25.62
7/23	38	48	18	26.37
7/24	46	41	16	25.62
7/25	50	52	14	28.00
7/26	66	39	19	26.00
7/27	37	40	21	28.25
7/28	48	39	19	29.75
7/29	46	37	24	30.00
7/30	39	36	20	26.86
7/31	46	42	21	28.50
8/1	41	39	16	29.62
8/2	56	37	23	30.29
8/3	57	31	20	25.75
8/4	85	36	22	27.50
8/5	60	43	15	29.25
8/6	65	38	15	28.13
8/7	50	41	1	23.37
8/8	42	44	18	26.62
8/9	42	31	21	25.12
8/10	45	46	21	29.57
8/11	72	34	21	27.75
8/12	0	43	22	31.37
8/13	0	46	23	29.57
8/14	27	52	22	31.75
8/15	28	46	16	28.75
8/16	0	44	18	29.86
8/17	22	38	18	26.00
8/18	16	44	10	28.62
8/19	15	34	12	24.87
8/20	19	33	12	23.37
8/21	19	41	17	27.50
8/22	25	45	18	31.25

BONANZA BI

Date	1979	Max.	Min.	Average
7/8	79	50	28	34.33
7/9	Missing	58	28	37.14
7/10	65	50	0	31.12
7/11	77	50	23	35.00
7/12	Missing	54	18	38.87
7/13	66	57	25	38.12
7/14	50	49	31	37.37
7/15	64	43	32	38.75
7/16	58	62	24	41.25
7/17	61	52	0	29.75
7/18	54	67	24	40.00
7/19	48	53	24	33.75
7/20	56	53	0	33.12
7/21	50	52	25	37.00
7/22	18	45	17	35.12
7/23	53	67	24	36.50
7/24	64	57	0	33.00
7/25	70	73	20	39.62
7/26	91	50	24	35.50
7/27	52	55	29	37.75
7/28	63	49	27	39.62
7/29	63	52	32	40.12
7/30	54	51	28	37.43
7/31	64	59	29	39.75
8/1	57	55	22	40.50
8/2	79	52	32	41.86
8/3	80	43	27	35.62
8/4	108	48	30	37.87
8/5	82	61	21	40.37
8/6	88	54	0	34.38
8/7	68	58	0	32.12
8/8	58	62	24	36.87
8/9	58	43	29	35.12
8/10	62	64	30	40.86
8/11	99	47	27	37.87
8/12	0	60	31	43.00
8/13	0	64	31	40.71
8/14	37	73	31	43.37
8/15	39	65	22	40.00
8/16	0	62	25	41.57
8/17	30	53	0	30.50
8/18	22	62	14	40.12
8/19	21	48	17	34.87
8/20	27	46	17	32.50
8/21	27	57	24	38.25
8/22	34	59	24	42.50

PRECIPITATION

AT CHALLIS

Period	Amt. PPT (in.)	Average
August 1978	.53	.56
September 1978	1.35	.64
October 1978	.00	.40
November 1978	.04	.38
December 1978	.55	.61
January 1979	.48	.55
February 1979	.61	.36
March 1979	.74	.33
April 1979	.76	.53
May 1979	.46	1.20
June 1979	.50	1.39
July 1979	.34	.55
	6.36	7.50

August 1978 to July 1979 had received 85% of normal precipitation.

October 1978 to July 1979 had received 71% of normal precipitation.

JULY PRECIPITATION

Date	Bonanza	Little Creek	Challis
7/4	0	.14	.02
7/6	.02	.02	0
7/7	.03	.02	0
7/18	0	.15	0
7/22	.06	0	.27
7/23	0	0	.05
	.11	.33	.34

Date	LITTLE CREEK WEATHER Temp.	RH	Wsp	FOREST CON. CLASS Pred.	Act.
7/26	89	14	12	4	4
7/27	88	20	6	4	4
7/28	84	23	4	H 3	4
7/29	83	18	5	4	4
7/30	85	15	5	4	4
7/31	90	11	5	4	4
8/1	91	12	7	4	4
8/2	88	10	10	4	4
8/3	87	19	17	4	5
8/4	91	7	23	5	5
8/5	82	15	10	4	4
8/6	--	--	--	4	4
8/7	--	--	--	4	5
8/8	72	42	10	4	4
8/9	86	20	5	4	4

7/26 - Fire Weather Forecast Summary

Today: Chance dry isolate thunder storms
Otherwise mostly fair
Free air wind SW 10-15

Tonight: Fair with thunder storms ending midnight

Tomorrow: Hot & dry - Continued chance thunder storms

Sat-Mon: Chance widely scattered thunder storms
Otherwise dry with near seasonal temperaturs

Extended 7/30-8/3: Above normal temperatures with little or no precipitation

1,000 HR. FUEL MOISTURE

Date	Challis		Little Creek		Bonanza	
	Actual	Ave.	Actual	Ave.	Actual	Ave.
7/14-20	8	13	9	12	11	15
7/21-24	7	13	8	12	10	14
7/25-31	8	12	8	11	11	14
8/1-3	7	12	7	11	10	13
8/4-5	7	12	7	11	9	13
8/6-10	6	12	6	11	9	13
8/11	6	13	8	12	9	14
8/12	6	13	8	11	10	14
8/13	10	13	10	12	14	14
8/14-15	10	13	10	13	15	15
8/16	11	13	11	13	15	15

PRE-MORTAR CREEK SITUATION

7/6 & 7/7	-	9 A fires & 1 B fire Sup. forces including 10 S.J.	38
7/8	-	Little Loon Cr. fire - 55 acres Sup. forces including 38 S.J. & Forest O.H. Team	158
7/11	-	Mahoney Cr. fire - 105 acres Sup. forces including 50 S.J. & R-4 O.H. Team	283
7/15	-	Boundary Cr. fire - 8 acres Sup. forces including 18 S.J.	61
7/16 & 7/17	-	7 A fires & 1 B fire Sup. forces -	31
7/17	-	Rock Cr. fire - 9 acres Sup. forces	42
7/18 & 19	-	3 A fires & 1 B fire Sup. forces	22
7/23 & 24	-	3 A fires - Suppression Forces	6
7/26	-	Mortar Cr. Suppression Forces Including 24 Smoke Jumpers	2365
During Mortar Cr. - 11 A fires & 1 B fire Suppression forces including 14 S.J.			49

FIRE OCCURRENCE

CHALLIS NATIONAL FOREST

Man-Caused

	Ave. 60-69	Ave. 70-78
	A - 6.2	A - 13.3
	B - 1.7	B - 1.3
	C - 0.3	C - 0.8
	D - 0.2	D - 0.0
	E - 0.2	E - 0.1
Total	8.6 Fires	15.5 Fires
Acres	531.9 Acres	104.7 Acres

Lightning-Caused

	Ave. 60-69	Ave. 70-78
	A - 35.6	A - 27.9
	B - 5.1	B - 2.2
	C - 0.2	C - 0.2
	D - 0.2	D - 0.0
	E - 0.4	E - 0.0
Total	42.5 Fires	30.5 Fires
Acres	235.1 Acres	19.7 Acres

Total Occurrence

Ave. 60-69	Ave. 70-78
A - 41.8	A - 40.2
B - 6.8	B - 3.5
C - 1.5	C - 1.2
D - 0.4	D - 0.0
E - 0.6	E - 0.1
Total 51.1 Fires	45.0 Fires
Ac. 767. Acres	124.4 Acres

FIRE OCCURRENCE

D-1 Ave: 70-78

Man-Caused	Lightning	Total
A - 7.1	A - 13.9	A - 21.0
B - 0.7	B - 1.4	B - 2.1
C - 0.4	C - 0.2	C - 0.6
D - 0.0	D - 0.0	D - 0.0
8.2 Fires	15.5 Fires	23.7 Fires
20.3 Acres	9.5 Acres	29.8 Acres

1979

Man-Caused		Lightning		Total	
D-1	Forest	D-1	Forest	D-1	Forest
A-5	11	17	33	22	44
B-2	2	3	7	5	9
C-1	1	0	0	1	1
D-1	1	0	0	1	1
E-1	1	0	0	1	1
G-1	1	0	0	1	1
11	17	20	40	31	57 Fires
cres	Acres	4.7	28.8	66,383.2	66,407.9
66,378.5	66,379.1				

Man-Caused Fires Along the Middle Fork

1960 - 1969 ave.	2.5
1970 - 1978 ave.	7.1
1979	7.0

HIGH FIRE OCCURRENCE DAYS

Fourth worst 4-day period from National Fire Planning: (1960-1969)

1966 8/6 - 8/9 = 21 fires (14 on D-1) Fire Weather - CC II & L III

Computed Suppression Requirements: 38 man I.A. Force
with 2 light helicopters
4 smokejumpers

Worst 4-day periods 1970 - 1979

1970 - 1978

1st	1973	8/22 - 8/24	= 29 fires (14 on D-1)	CC II
2nd	1970	8/30 - 9/2	= 26 fires (10 on D-1)	CC II & L III
3rd	1978	8/31 - 9/3	= 18 fires (8 on D-1)	CC II
4th	1976	8/21 - 8/24	= 13 fires (10 on D-1)	CC II
5th	1976	7/10 - 7/13	= 12 fires (5 on D-1)	CC II & L III

1979

7/5 - 7/8 = 12 fires Includes 1 B & 1 C
(9 fires on D-1) CC H III & IV

7/16 - 7/19 = 13 fires Includes 3 B fires
(5 fires on D-1) CC IV

MANPOWER BUILDUP BY ZONE

	Bruce	Loon	River	GHQ &/or Support	Total
6/26	78	--	--	10	88
7/27	268	--	--	10	278
7/28	510	--	--	10	520
7/29	585	--	--	12	597
7/30	565	--	--	14	579
7/31	328	--	--	12	340
8/1	228	--	--	12	240
8/2	48	--	--	2	50
8/3	260	--	--	10	270
8/4	590	--	--	12	602
8/5	672	--	--	20	692
8/6	780	--	--	20	800
8/7	878	198	36	20	1132
8/8	905	305	100	40	1350
8/9	935	405	230	80	1650
8/10	855	870	560	80	2365
8/11	935	705	390	80	2110
8/12	850	820	560	85	2315
8/13	685	645	450	80	1860
8/14	485	665	330	75	1555
8/15	450	1100	205	70	1825
8/16	430	1040	--	55	1525
8/17	350	715	--	50	1115
8/18	230	325	--	30	585
8/19	137	--	--	20	157
8/20	117	--	--	10	127
8/21	117	--	--	10	127
8/22	52	--	--	5	57
8/23	32	--	--	5	37
8/24	22	--	--	2	24

MANPOWER BUILDUP BY CLASS

	Line Workers	Line Over-head	Camp & Other Support	Total
7/26	25	3	60	88
7/27	160	8	110	278
7/28	380	10	130	520
7/29	420	15	162	597
7/30	400	15	164	579
7/31	200	8	132	340
8/1	120	8	112	240
8/2	40	3	7	50
8/3	180	10	80	270
8/4	400	20	182	602
8/5	420	22	250	692
8/6	500	25	275	800
8/7	760	49	375	1184
8/8	840	70	440	1350
8/9	1060	80	510	1650
8/10	1660	115	590	2365
8/11	1340	105	665	2110
8/12	1500	125	690	2315
8/13	1110	100	650	1860
8/14	820	80	655	1555
8/15	1120	95	610	1825
8/16	1010	80	435	1525
8/17	690	60	365	1115
8/18	250	40	295	585
8/19	45	2	110	157
8/20	45	2	80	127
8/21	45	2	80	127
8/22	20	2	35	57
8/23	20	2	15	37
8/24	20	2	2	24

HELICOPTER USE
EXCLUDING MILITARY

Class	Number	Days Used	Hours Used	Average Use
Al III	6	58	290	5.0 hrs./day
Llama	5	61	292	4.8 hrs./day
Bell 206B	4	50	249	5.0 hrs./day
206B III	2	33	145	4.4 hrs./day
Long Ranger	1	5	29	5.8 hrs./day
212	5	57	360	6.3 hrs./day
Hiller FH 1100	1	3	11	3.7 hrs./day
Hughs 500C	2	22	124	5.6 hrs./day
	26	289	1500	5.2 hrs./day

Flight Costs - On Fire	1500 hrs.	485,000
- To & From Fire	280 hrs.	75,000
Availability Costs	370 days	271,000
	TOTAL	831,000

MILITARY HELICOPTER USE

8/7 - 8/17

Type	No. Helicopters	On Fire	To & From	Total
OH-58	1	36.8	Est. 12	48.8
UH-1H	5	168.7	Est. 60	228.7
CH-47	2	66.0	Est. 30	96.0
TOTALS	8	271.5	102	373.5

NATIONAL GUARD RESOURCES per Bill Morgan as of 0800 Aug 9, 1979

2 1/2 Ton Truck with seats	2
5 Ton Dumps with seats	3
4 x 4 Dodge Truck with seats (10 person capacity)	24
Mess Trucks	7
Low Boys	12
Truck Tractors	13
Water Purification Units	6
Stakeside Trucks	3
1000 Gal Distribution water Trucks	1
1000 Gal Water Tanker	1
Brush Rig Fire Truck	1
Structural Fire Truck	1
Shower Units	2
Medical Aid Teams (3 person)	4 to 6

These vehicles are supplied with operators.

—JTH —

AERIAL SUPPORT
AIR TANKER USE BY DAY

Day	Drops	Gallons
7/26	2	4,450
7/27	0	0
7/28	3	6,900
7/29	12	20,700
7/30	0	0
7/31	0	0
8/1	0	0
8/2	2	2,000
8/3	8	13,800
8/4	8	16,250
8/5	12	28,050
8/6	5	9,350
8/7	5	10,450
8/8	7	17,150
8/9	4	9,350
8/10	14	31,600
8/11	6	13,350
TOTALS	88 Loads	183,400 Gals.

7/27
GCR
Plans Chief

Mortar Cr. Fire
Strategic Plan

I. Strategic Plan Based on Escape Fire Analysis Alternative A - Total suppression with best utilization of terrain with primary consideration of fire fighter safety ~~limited~~ following modification: Fire on east side of river not expected to spread significantly.

II. History - Fire spread to 1100 acres on 7/26, approx 7 hours

III. Calculation of containment - control by 1000 7/28 (west side only, logistical problems would not permit effective action on both sides)

1. Projected Spread 3000 Acres (entire fire)
2. Perimeter 900 chains
3. Effective crew hours available until control time - 10 (Low because of logistic limitations)
4. Chains/hr construct wood 90 = 7.5
5. * Production rate, build, burnout and hold 5 ch/hr
6. No. Crews 90/5 = 18 crews
7. Round to 20 crews ordered

* Normal estimating guides & prod. rates unless this summer on the Middle Fork Salmon R.

Over

IV. ALTERNATE PLANS – See Escape Fire Analysis

USDA - FOREST SERVICE

INDIVIDUAL FIRE REPORT

FIRE NAME: Mortor Creek

RANGER FIRE NO.: 23

MANDATORY ITEMS: CLASS A 1-33 | CLASS B 1-34 | CLASS C to G 1-44

REGION FIRE NO.:

1. State [2-3]	2. County	3. Forest [4-5]	4. District [6-7]	5. Supervisor [8-10] No.
Idaho 16	Valley	Challis 06	Middle Fork 01	042

6. Fire started on [11]	7. Month [12]	Day [13-14]	Year [15]	8. Watershed No. [16-23]	9. Size Class [24]
N. F. 1	July 7	26	9	17060205	G

10. Statistical Cause [25]	11. General Cause [26]	12. Specific Cause [27-28]	13. Class of people [29]
Camp Fire 4	Fishing 7	Cooking 08	Visitor 9

	DATE Mo. Day	HOUR	ELAPSED TIME Hours [30-31]	Min. [34-35]
14. Origin	07-25	0800	06	
15. Discovered (Item 15 minus 14)	07-26	1424	32 [32-33]	24 [34-35]
16. First attack (Item 16 minus 15)	07-26	1515	00 [36-37]	51 [38-39]
17. First Reinforcement (Item 17 minus 16)	07-26	1620	1 [40]	56 [41-42]
18. Fire Controlled Item 18 minus 16	08-19	1000	571 [43-45]	
19. Fire Out	10-20	1700		

20. Discovered by (Class) | Location: Little Soldier [46]: 1

21. First Attack by | (Kind): Retardant | (Amount): 2,400 [47-48]: 67

22. First Reinforcements (Kind): Retardant | (Amount): 2,400 [49-50]: 67

23. Maximum No. Personnel: 2365 [51-54]: 2365

24. Value Class at Origin [55]: 6

25. Fire danger: Bonanza [56-57]: 71

26. Special Weather feature: 13-18 mph [58]: 7

27. Slope: 70-79% [59]: 7

28. Aspect: East [60]: 1

29. Elevation: 5,000 ft. [61]: 5

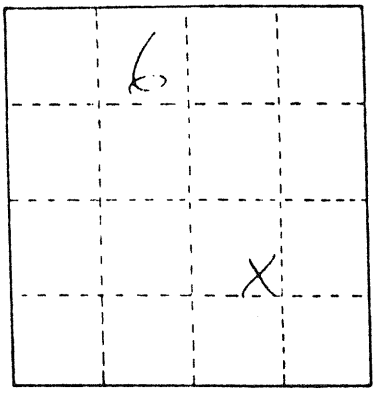
30. Cover type - vicinity of origin: Doug-fir Mixed [62-63]: 23

31. Fuel type - vicinity of origin: Medium - Medium [64-69]: 000022

32. Cost Class: Est. 5,000,000 [70]: 6

33. Location

Scale: 2 inches = 1 mile



Location description

a. Township [71-74]	025N
b. Range [75-78]	021E
c. Section [79-80]	06
d. Meridian	Boise

Alternate description for lands not covered by GLO survey

e. Latitude [72-75]	4440
f. Longitude [76-80]	11510

34. Acres burned	NATIONAL FOREST LANDS	OTHER LANDS INSIDE
a. Noncommercial forest	065300 [11-16]	00000 [17-21]
b. Commercial forest (1) Natural	000000 [22-27]	00000 [28-32]
(2) Plantation	00000 [33-37]	00000 [38-42]
c. Nonforest	000000 [43-48]	00000 [49-53]
35. Volume of timber destroyed (MBM) 15,000,000	015000 [54-59]	00000 [60-64]

36. Total area when controlled [65-70]: 065300

37. Fuel type prevailing on burned area: Doug Fir Mixed [71-76]: 000023

38. Topography (vicinity of origin) [77]: 9

39. Highest Fire Danger: Bonanza BI 108 [78-79]: 99

40. Critical Weather Feature: Winds Gusty over 25 [80]: 9

Remarks (Continue on reverse if required)

REFER TO ATTACHED SUMMARY

Submitted (Signature)	Date	Approved (Signature)	Date
[Acting] District Ranger	10/25/79	[Acting] Forest Supervisor	10/25/79

5100-29 (10/69)

Value of Resources Damaged or Destroyed (Code in hundreds of dollars)		N.F. LANDS (1)		OTHER LANDS (2) INSIDE FS PROTECTION	
		Dollars	Code	Dollars	Code
1. Timber		0	[11-15] -----		[16-20] -----
2. Other (non-timber)					
a. Watershed		5,000	[21-25] 05000		[26-29] ----
b. Recreation		0	[30-34] -----		[35-38] ----
c. Range & Wildlife		493,000			
d. Improvements		0			
e. Other non-timber		0			
f. Total non-timber (a to e incl.)		498,000	[39-43] 99999		[44-48] 00000
3. GRAND TOTAL (Items 41 and 42f)		498,000			
4. Acres burned by Value Class	Value Class		Acres		Acres
Class 6 - 1600 A	[49] 6		[50-54] 01600		[55-59] -----
Class 2 - 63,700 A	[60] 2		[61-65] 63700		[66-70] -----
-	[71] - -		[72-75] ----		[76-79] 0000

SUMMARY OF

MORTAR CREEK FIRE

The fire is assumed to have started from a camp fire that was abandoned the morning of July 25, 1979. Suspects have been located and questioned by the investigator assigned, and legal action is pending at this time.

The fire was discovered and reported at 1424 hrs. on July 26, by a patrol plane and by Big Baldy and Little Soldier Lookouts, nearly simultaneously.

Initial action was unsuccessful, due to extreme burning conditions and drought effects on heavy fuels. These conditions resulted in such rapid initial spread and extreme fire intensity that jumpers or helitack could not be landed near the fire area. Also, retardant was not effective, due to crowning, spotting and fire intensity. For example: In less than one hour, the fire had spread to 300 acres; in four hours to 770 acres; and in 11½ hours to 1,100 acres. The first effective actions on the Fire was helispot construction by the District FMO and Helitack late in the evening of July 26.

Soon after the fire was reported, it was obvious that a project fire was in the making. At 1550 hrs. July 25, the Forest ordered R-4 Overhead Team "A" and sufficient resources to begin action. By dark most of Team A, the fire camp, some crews and some helicopters were in place at the Bruce Meadows base camp. Highly successful action was taken 7/27-7/30 by some 597 workers. They were assisted by a decrease in fire weather - BI from Bonanza 7/26 - 91, 7/27 - 52, 7/28 & 7/29 - 63, 7/30 - 54). At 1200 hrs. on 7/30, the fire was declared contained and at 1800, it was declared controlled at 2,250 acres.

At 1200 hrs. on August 1, Team "A" turned the fire back to the Forest. Resources on the fire at this time consisted of two 20 men crews, two Sector Bosses, two helicopters, six helitack, one Air Service Manager, one Safety Officer, and three camp crewment, with the District FMO as Fire Boss.

On August 2, the BI at Bonanza was back to 79. These extreme burning conditions accompanied by an 8-12 mph wind caused unburned islands within the fire to flare up. A Sector Boss and a 20 man crew had just arrived at one of these islands in Greyhound Creek at 1200 hrs. when the fire became established in the crown. Retardant was ordered immediately but was not effective, due to fire intensity and spotting. At about 1500 hrs. the Fire Boss, Line Team and Air Service component of Team "A" was requested to return to Bruce Meadows by the Forest. At the time of this request, it was assumed the fire would burn to the ridge between Greyhound Creek and Hardscrabble Creek and lay down sufficiently during the evening for jumpers and retardant to be effective that evening or the next morning, thus picking up the blow out. By the time the Fire

Boss looked at the fire at 2200 hrs., it was well established in Hardscrabble Creek and would obviously require a major suppression effort. He then ordered the remainder of his team and other necessary resources. By the time the fire's run was over on August 2, it burned an additional 1,225 acres. Thus beginning Major Mortar Creek:

8/3: BI - 80 Fire burned additional 3,565 acres.

8/4: BI - 108 Fire burned additional 4,760 acres.

Decision made to zone fire with GHQ in Boise.

8/5: BI - 82 Fire burned additional 18,560 acres.

Threatened facilities at Thomas Creek and Little Creek and spotted across river above Mahoney Airstrip. GHQ established at Boise with Leight as manager.

8/6: BI - 88 Fire burned additional 600 acres.

Protection action successful at Thomas Creek and Little Creek. Loon Zone established with R-6 Overhead Team.

8/7: BI - 68 Fire burned additional 18,740 acres.

River zone with R-3 Overhead established to protect Pistol Creek, Indian Creek, Thomas Creek and Little Creek.

8/8: BI - 58 Fire spread additional 7,100 acres.

8/9: R-4 Team "B" relieved R-4 Team "A".

8/10: BI - 78 Fire spread additional 2,600 acres since 8/8.

8/12: Started to rain in afternoon.

Fire spread since 8/10 - 5,900 acres.

Total acres burned - 65,300

8/13: Continued to rain. No further fire spread.

About 500 fire fighters walked from spike camps to road at Dagger Falls as helicopters were unable to fly support.

8/14: Zones restructured.

R-3 Team released. River zone absorbed by Bruce Meadows and Loon Zone.

8/16: Fire declared contained.

8/19: Fire declared controlled at 1000 hrs.

Zones restructured. R-4 Team "B" and R-6 Team released. R-4 Team "A" took over fire.

8/22: R-4 Team "A" released. Forest took over fire.

10/20: Fire declared out at 1700 hrs.

Regarding the blow-out in Greyhound on August 2, which resulted in a major campaign fire: What should have or could have been done to prevent the blow-out? At the time the fire blew-out, no reasonable amount of resources could have stopped it? Twenty-twenty hindsight indicates the mop-up force, which was recommended by the Fire Team and approved by the Forest after an air recon of the fire, was inadequate. Existing weather conditions, accompanied by the drought-effected heavy fuels, required more crews than normal to mop-up the unburned islands within the fire.

6

Fire Name: MORTAR CREEK Date: 7/26/79 Time: 14:24
District: MIDDLE FORK, Challis National Forest

I. SITUATION AT TIME OF ESCAPE

1. Fire escaped initial action: Time 1440 Date 7/26/79
2. Size of fire when it escaped: 15 Acres
3. Perimeter of fire at escape time: 60 Chains
4. Perimeter increase at escape time: 100 + Ch/hr
5. Fire behavior at escape time: IRRATIC + CROWNING DUE TO EXTREME FIRE BEHAVIOR
6. No. men on fire: 0 ; Enroute: 14
7. Size potential: 10,600 Plus Acres
8. Remarks: Based on time of year, Burning Conditions, Location, Values fuels & Observations of Salmon Fire - Modified Suppression is not a viable Alternative

II. EXTENDED FIRE WEATHER FORECAST

EXTENDED HOT AND DRY, NO PRECIP + ABOVE NORMAL TEMP. THROUGH AUG 3

III. ALTERNATIVE CONSIDERATIONS

1. Suppression costs/day	A 3 da		B 4 da		C 5 da		D 6 da	
a. Manpower $/14 Hr. Day	No.	$	No.	$	No.	$	No.	$
Overhead 190 (150)	30	5700	30	5700	30	5700	30	5700
Smokejump 120	30	3600	30	3600	30	3600	30	3600
Line worker 100	100	10000	140	14000	180	18000	220	22000
Serv. help 90	10	900	10	900	10	900	10	900
b. Aircraft $/hr								
206B ~~250~~ 300 Sh	2	3000	2	3000	2	3000	2	3000
Llama 425								
Bell 212 ~~500~~ 1000	1	5000	1	5000	1	5000	1	5000
Cessna 206 80	1	700	1	700	1	700	1	700
DC3 200	2	1600	2	1600	2	1600	2	1600
Twin Otter 450								
c. Equipment Operated								
D-4 30/hr.								
D-6 40/hr.								
D-7 50/hr.								
Lowboy 40/hr.								
Water Wagon 30/hr.								
Patrol 30/hr.								
20 Pass. bus 250/day	3	750	3	750	4	1000	5	1250
60 Pass. bus 300/day								
d. Retardant $1.10/gal								
Includes Lead plane & A.A.	18000	19100	18000	19000	18000	19600	18000	19000
e. Meals $25/Man/Day								
Includes delivery	200	5000	240	6000	280	7000	320	8000
f. Other $		5000		5000		5000		5000
g. Suppression $/Day		60,000	65	250	70	500	75	750
	3 days	180,000		261,000		352,500		454,500

		A	B	C	D
2.	Est Control Date	7/29	7/30	7/31	8/1
3.	Est Size at Control	3000	5500	6500	7000
4.	Probability of Control	60%	70%	80%	60%
5.	Relation to Other Fires	Salmon			
6.	Coord: a) other agencies	NA			
	b) other Landowners	NA			
7.	Total $ Costs				
	a) Suppression	180,000			
	b) Rehabilitation	0			
	c) Other Costs or Losses	—			
	TOTAL $	18000			

Rate each Effect + or - 1 to 5

		A			B			C			D		
		-	0	+	-	0	+	-	0	+	-	0	+
8.	Environmental Effects												
	a) Air quality			1									
	b) Wildlife	3											
	c) Aesthetics	3											
	d) Timber		8										
	e) Range		8										
	f) Recreation-developed		0										
	dispersed	2											
	g) Watershed	2											
	h) Cultural	2											
	i) Improvements		0										
	j) Soil	2											
	k) Fuels			2									
	TOTAL												
9.	Social & Political Effects												
	a) Visual		0										
	b) Public Concern	1											
	c) Employment		0										
	d) Public Safety	1											
	e) Fire fighter Safety	2											
	TOTAL												

IV. DESCRIPTION OF ALTERNATIVES

A. Total Suppression at the Smallest Size practical through utilizing Terrain & Considering Fire fighter Safety,

B. Next Logical Control Lines based on terrain

C. Next Logical Control Lines Based on Terrain

D. Next Logical Control Lines Based on Terrain

V. ALTERNATIVE SELECTED: A

WHY: Most economical way to Suppress this fire Based on existing & Forcasted weather & Lack of Natural Barriers, is Catch it as Small an area as Safely possible

Prepared by: Dunham, Reid, & Bills 1530 Date: 7/26/79

Rec. Approval by: _____ Date: _____

Approved by: Jack E. Bills Date: 7/26/79

(Forest Supervisor or his acting)

RO FROM SALMON NF
HELICOPTER 60 IS COMMITTED TO THE SHIP ISLAND FIRE NO AVAILABLE GA

SS
NATIONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO JULY 26, 1979
MORNING FIRE WEATHER FORECAST ISSUED 0930 AM MDT THURSDAY.

DISCUSSION...LITTLE CHANGE IN THE OVERALL WEATHER PATTERN EXCEPT A LITTLE MOISTURE INFLUX FROM THE SOUTHWEST. THIS MOISTURE IS MORE PREVALENT OVER SOUTHEAST IDAHO AND WESTERN WYOMING.

AREA I ZONES 411-417

TODAY...PARTLY CLOUDY WITH WIDELY SCATTERED SHOWERS OR THUNDERSHOWERS

FREE AIR WIND...WEST TO SOUTHWEST 10-15 MPH.
YELLOWSTONE LAKE FORECAST....SMOOTH EXCEPT ROUGH IN THE VICINITY OF THUNDERSTORMS.

TONIGHT...THUNDERSHOWERS ENDING AFTER MIDNIGHT.

FRIDAY...MOSTLY SUNNY AND WARM. CHANCE OF ISOLATED MOSTLY DRY AFTERNOON AND EVENING THUNDERSTORMS. AIR DISPERSAL...GOOD TODAY...POOR TONIGHT...GOOD FRIDAY AREA II ZONES 637 AND 403-410 TODAY...SUNNY HOT AND DRY. RISK OF ISOLATED MOSTLY DRY THUNDERSTORMS IN ALL ZONES EXCEPT 637. FREE AIR WIND...WEST TO SOUTHWEST 10-15 MPH.

TONIGHT...FAIR WITH THUNDERSTORMS ENDING AFTER MIDNIGHT.

FRIDAY...SUNNY HOT AND DRY. CONTINUED RISK OF A FEW AFTERNOON MOSTLY DRY THUNDERSTORMS.
AIR DISPERSAL...GOOD TODAY...POOR TONIGHT...GOOD FRIDAY

AREA III ZONES 401-407
TODAY...CHANCE OF ISOLATED DRY THUNDERSTORMS EAST OTHERWISE MOSTLY FAIR.

FREE AIR WIND....WEST TO SOUTHWEST 10-15 MPH.

TONIGHT...FAIR WITH THUNDERSTORMS ENDING AFTER MIDNIGHT.

FRIDAY...SUNNY..HOT AND DRY. CONTINUED CHANCE OF ISOLATED DRY THUNDER-STORMS LATE IN THE DAY.

AIR DISPERSAL...GOOD TODAY...POOR TONIGHT...GOOD FRIDAY
EXTENDED FORECAST FOR SATURDAY THRU MONDAY...WIDELY SCATTERED AFTERNOON AND EVENING THUNDERSTORMS POSSIBLE. OTHERWISE DRY WITH NEAR SEASONAL TEMPERATURES.

EXTENDED OUTLOOK FOR JULY 30 THRU AUG 3...ABOVE NORMAL TEMPERATURES WITH LITTLE OR NO PRECIPITATION.

ZONE FORECAST CHANGES.....NONE

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: HAMMER

Fire: Mortar Ck

Date and Time 7/27/79 1730

Location BNF

Forecast No. 2

Weather Discussion: Southerly flow aloft continues with an influx of moisture from Nevada and Utah.

Forecast for Shift (Time) FRIDAY NIGHT

Weather: Scattered showers or thundershower ending about midnight. Showers will generally only produce virga.

Temperature: Low tonight Upper 30s in the river bottoms to mid 40s at some higher elevations.

Humidity: Humidity near 25 percent increasing to 80%.

Ridge Top Wind: Winds southerly 8-15 mph.

Slope Winds: upslope winds diminishing after sundown becoming light downslope 2-4 mph.

Stability: Inversion likely to form tonight ~~abit~~ with smoke trapped in valleys, dissapating mid morning.

Outlook for next shift: Saturday - Partly cloudy with widely scattered afternoon and evening thunderstorms, occasional Gusts. Winds a little higher 3-5 mph with little change in Temperature or Humidity.

Further Outlook (36-48 hours): Mostly dry with Temperatures near normal.

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Hammer

Fire: Mortar Ck

Date and Time 2050 7/29/79

Location BNF

Forecast No. 3

Weather Discussion: Weak short wave to cross area Saturday but little in the way of weather. Sattelite picture shows decrease in moisture over area

Forecast for Shift (Time) Tonight & Sat.

Weather: Decreasing showers til midnight then mostly fair. Isolated showers or thunder-showers (mostly dry) Saturday

Temperature: Low tonight ~~upper 30's~~ mid 30s lower elevations and low 40s higher elevations. High Saturday 75-85.

Humidity: max tonight 70-80
min Saturday 20-25 percent.

Ridge Top Wind: Southwest 10-15 occasional gusts

Slope Winds: Weak down slope much of tonight. upslope upcanyon developing Sat with mostly Southwest 10-15 with higher gusts in the late afternoon.

Stability: Inversion likely tonight with smoke trapped in valley. Inversion breaking mid morning. Little instability Sat afternoon with some Cu.

Outlook for next shift: Little change Saturday night from tonight

Further Outlook (36-48 hours):

Mostly dry with Temperature near seasonal normal

NWS, Boise, Idaho

Forecaster: Hammer

Fire: Mortar Ck

Date and Time 7/30/79 0900

Location BNF

Forecast No. 10

Weather Discussion: Basically no change in the weather from yesterday except for a few degrees warmer and a little drier. High pressure ridge persists over Wash and Ore. A weak short Wave is crossing northern Idaho but Shower activity from this system is expected to remain to the north. A few cumulus buildups will occur this afternoon.

Forecast for Shift (Time) Monday day shift

Weather: Sunny. A few cumulus buildups in the afternoon.

Temperature: 90-95 in the valley bottom and 80-85 at the higher elevations.

Humidity: 10-15 percent min rel hum today

Ridge Top Wind: westerly 5-9 this morning and 8-12 mph with occasional higher gusts this afternoon, winds diminishing again this evening.

Slope Winds: Lights winds this morning with upslope winds developing with the heating. Some upslope winds on the east side this afternoon 4-9 mph, however generall winds will still be southwesterly 7-12.

Stability: Stable this morning and a little unstable this afternoon.

Outlook for next shift: Monday night. Little change from ~~tonight~~ last night Mostly fair with light winds. Min temps in the 40s. Max rel hum 70-80 percent.

Further Outlook (36-48 hours): Continued warm and dry through wed.

MOBILE UNIT FORECAST

5

NWS, Boise, Idaho

Forecaster: Hammer

Fire: Mortar Ck

Date and Time 7/31/79 0900

Location BNF

Forecast No. 13

Weather Discussion: High pressure ridge to hold over the Pacific Northwest for the next several days. Very limited moisture is the airmass.

Forecast for Shift (Time) Tuesday, tuesday night and Wednesday

Weather: Clear cool nights. Sunny days with some afternoon Cumulus buildups.

Temperature: Highs 90-95 and overnight lows in the 40s.

Humidity: Min rel hum 10-15 percent with good humidity recovery at night 50-70 percent.

Ridge Top Wind: West to northwest 15-20 with occasional higher gusts in the afternoons. Winds diminishing in the evening to 10-15 mph and remaining there until increasing again in the afternoon.

Slope Winds:

Light downslope winds 2-4 mph at night with upslope 4-8 mph winds developing during the heating of the slopes. General wind continuing to blow from south or southwest down the canyon.

Stability:

Stable air at night with a little instability developing during the afternoon.

Outlook for next shift:

Outlook for Thursday and friday...little change in the present weather.

Further Outlook (36-48 hours):

Covered above...

8-12

Min at Base Camp 7/31/79 26°

M
NATIONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO AUGUST 1, 1979
MORNING FIRE WEATHER FORECAST ISSUED 0930 AM MDT WEDNESDAY

DISCUSSION...FAST MOVING WEAK UPPER DISTURBANCE MOVING ACROSS NRN AND CENTRAL IDAHO TODAY WILL INCREASE WINDS THIS AFTERNOON AND INCREASE CLOUDINESS FOR BRIEF PERIODS.

AREA I ZONES 411-417

TODAY...CLEAR AND HOT. NO ZONE CHANGES.
FREE AIR WIND... W TO SW 8-10 MPH.

TONIGHT..CLEAR. POOR HUMIDITY RECOVERY.

THURSDAY...SUNNY AND HOT.
AIR DISPERSAL... GOOD BY AFTERNOON AND POOR TONIGHT.
AREA II ZONES 637 and 408-410
TODAY...MOSTLY FAIR.
FREE AIR WIND...WESTERLY 8-10 MPH.
TONIGHT...CLEAR. POOR HUMIDITY RECOVERY.

THURSDAY...SUNNY AND HOT.
AIR DISPERSAL ...GOOD BY AFTERNOON..POOR TONIGHT

AREA III ZONES 401-407
TODAY...MOSTLY FAIR. VARIABLE CLOUDS. WINDY AT TIMES
FREE AIR WIND....WEST TO SOUTHWEST QPAQR MPH.

TONIGHT...MOSTLY FAIR. DECREASING WINDS, POOR HUMIDITY RECOVERY.

THURSDAY...MOSTLY FAIR AND HOT.

AIR DISPERSAL...GOOD BY AFTERMOON..POOR BY TONIGHT

EXTENDED FORECAST FOR FRIDAY THROUGH SUNDAY...DRY AND A LITTLE COOLER. POSSIBLE INCREASE IN WINDS FRIDAY OR SATURDAY ASSOCIATED WITH INCREASED CHANCE FOR THUNDERSTORMS BY THE WEEKEND NORTHERN ZONES.
EXTENDED OUTLOOK FOR AUGUST 6 THRU AUG 10... NEAR NORMAL TEMPERATURES WITH LITTLE OR NO PRECIPITATION.

END BOISE FIRE WEATHER

M
NATIONAL WEATHER SERVICE FORECAST OFFICE, BOISE IDAHO, AUGUST 1, 1979
AFTERNOON FIRE WEATHER FORECAST ISSUED AT 1600 MDT WEDNESDAY

.....SEE SPECIAL WEATHER STATEMENT AT END OF MESSAGE.....

AREA I ZONES 411-417
TONIGHT...MOSTLY FAIR WITH GOOD TEMPERATURE AND HUMIDITY RECOVERY.
THURSDAY...MOSTLY SUNNY WITH FEW AFTERNOON BUILDUPS. NOT MUCH CHANGE TEMPERATURE, HUMIDITY AND WINDS.
AIR DISPERSAL...POOR TONIGHT AND GOOD THURSDAY...LAL 1

ZONE	RGN	TIME	WX	TMP	RH	WND	D1	D2	TMX	TMN	RMX	RMN	AL	TL	FM
411	4	13	1	0	-2	0	0	0	M	M	M	M	1	1	-1
412	4	13	1	0	-2	0	0	0	M	M	M	M	1	1	0
413	4	13	1	0	0	0	0	0	M	M	M	M	1	1	0
414	4	13	1	0	0	0	0	0	M	M	M	M	1	1	0
415	4	13	1	0	0	0	0	0	M	M	M	M	1	1	0
416	4	13	1	0	-2	0	0	0	M	M	M	M	1	1	-1
417	4	13	1	0	0	0	0	0	M	M	M	M	1	1	0

AREA II ZONES 637 AND 408-410

TONIGHT...CLEAR WITH GOOD TEMPERATURE AND FAIR HUMIDITY RECOVERY.
WINDS DIMINISHING ABOUT MIDNIGHT.
THURSDAY...SUNNY, WARM AND DRY ALSO WINDY AT TIMES.
AIRMASS VERY STABLE IN THE MORNING BECOMING UNSTABLE BY AFTERNOON.
AIR DISPERSAL...POOR TONIGHT...GOOD THURSDAY...LAL...1

ZONE	RGN	TIME	WX	TMP	RH	WND	D1	D2	TMX	TMN	RMX	RMN	AL	TL	FM
637	6	13	0	0	-2	0	0	0	M	M	M	M	1	1	0
408	4	13	0	0	-2	0	0	0	M	M	M	M	1	1	0
409	4	13	0	0	0	0	0	0	M	M	M	M	1	1	0
410	4	13	0	0	-2	0	0	0	M	M	M	M	1	1	0

AREA III ZONES 401-407

TONIGHT...CLEAR WITH GOOD TEMPERATURE AND FAIR HUMIDITY RECOVERY.
WINDS DIMINISHING ABOUT MIDNIGHT.
THURSDAY..SUNNY, WARM AND DRY ALSO WINDY AT TIMES.

AIRMASS VERY STABLE IN THE MORNING BECOMING UNSTABLE BY AFTERNOON.

AIR DISPERSAL...POOR TONIGHT...GOOD THURSDAY...LAL 1

ZONE	RGN	TIME	WX	TMP	RH	WND	D1	D2	TMX	TMN	RMX	RMN	AL	TL	FM
401	4	13	0	0	0	0	0	0	M	M	M	M	1	1	0
402	4	13	0	0	-2	0	0	0	M	M	M	M	1	1	-1
403	4	13	0	0	-2	0	0	0	M	M	M	M	1	1	-1
404	4	13	0	0	0	-3	0	0	M	M	M	M	1	1	0
405	4	13	1	0	0	0	0	0	M	M	M	M	1	1	0
406	4	13	1	0	0	0	0	0	M	M	M	M	1	1	0
407	4	13	0	0	0	0	0	0	M	M	M	M	1	1	0

IDAHO STATE DEPT LANDS	WX	TMP	RH	WND	AL	TL	FM
GARDEN VALLEY.....	0	92	16	NW/9	1	1	7
COUNCIL.....	0	92	15	N/3	1	1	7

....SPECIAL WEATHER STATEMENT...POSSIBLE INCREASE IN WINDS IS EXPECTED FRIDAY OR SATURDAY. MOST LIKELY PERIOD AT THE PRESENT TIME LOOKS LIKE SATURDAY. ALSO AN INCREASED CHANCE OF THUNDERSTORMS BY THE WEEKEND FOR THE NORTHERN ZONES.
END BOISE FIRE WEATHER

NATIONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO, AUGUST 2, 1979
MORNING FIRE WEATHER FORECAST ISSUED 0930 AM MDT THURSDAY

DISCUSSION...WARM AND DRY CONDITIONS TO HOLD OVER DISTRICT TODAY..HOWEVER UPPER LEVEL LOW PRESSURE SYSTEM EASTERN PACIFIC WILL BE NUDGING TOWARD WEST COAST FRIDAY FOR A LITTLE COOLING WEST AND NORTHERN PORTIONS DISTRICT. THIS LATER DEVELOPMENT SHOULD BRING SOME INCREASE IN WINDS FRIDAY AFTERNOON..ESPECIALLY HIGHER ELEVATIONS.

AREA I ZONES 411-417.
TODAY...SUNNY AND HOT.
FREE AIR WIND...WEST TO NORTHWEST 10-20 MPH.
TONIGHT...FAIR.
FRIDAY...SUNNY AND CONTINUED WARM AND DRY. LOCAL GUSTY AFTERNOON WINDS.
AIR DISPERSAL...GOOD BY AFTERNOON AND POOR TONIGHT...EXCELLENT FRIDAY.

AREA II ZONES 637 AND 408-410.
TODAY...SUNNY WARM AND DRY.
FREE AIR WIND...WEST TO NORTHWEST 10-25 MPH.
TONIGHT...FAIR.

FRIDAY...MOSTLY SUNNY DRY AND A LITTLE COOLER. GUSTY AFTERNOON WINDS
AIR DISPERSAL...GOOD BY AFTERNOON...POOR TONIGHT. EXCELLENT FRIDAY.

AREA III ZONES 401-407
TODAY...SUNNY AND HOT. LOCAL GUSTY AFTERNOON WINDS.
FREE AIR WIND...WEST TO NORTHWEST 10-25 MPH.
TONIGHT...MOSTLY FAIR. DECREASING WINDS.
FRIDAY...MOSTLY FAIR AND DRY. A LITTLE COOLER WITH GUSTY AFTERNOON WINDS.
AIR DISPERSAL...GOOD BY AFTERNOON...POOR TONIGHT...EXCELLENT FRIDAY.

EXTENDED FORECAST FOR SATURDAY THRU MONDAY...SOME CHANCE OF A FEW SHOWERS OR THUNDERSHOWERS AND COOLER WITH TEMPERATURES A LITTLE BELOW NORMAL.

EXTENDED OUTLOOK FOR AUG 7 THRU AUG 10...NEAR NORMAL TEMPERATURES WITH LITTLE OR NO PRECIPITATION.

END BOISE FIRE WEATHER.

NATIONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO, AUGUST 2, 1979
AFTERNOON FIRE WEATHER FORECAST ISSUED AT 1600 MDT THRUSDAY

....SEE SPECIAL WEATHER STATEMENT AT END OF MESSAGE....

AREA I ZONES 411-417
TONIGHT...MOSTLY FAIR.
FRIDAY...MOSTLY SUNNY AND CONTINUED WARM AND DRY. LOCAL GUSTY AFTERNOON WINDS.
AIR DISPERSAL...POOR TONIGHT AND GOOD FRIDAY LAL 1

ZONE	RGN	TIME	WX	TMP	RH	WND	D1	D2	TMX	TMN	RMX	RMN	AL	TL	FM
411	4	13	0	0	0	0	0	0	M	M	M	M	1	1	0
412	4	13	0	0	0	0	0	0	M	M	M	M	1	1	0
413	4	13	0	0	0	0	0	0	M	M	M	M	1	1	0
414	4	13	0	0	0	0	0	0	M	M	M	M	1	1	0
415	4	13	0	0	0	0	0	0	M	M	M	M	1	1	0
416	4	13	0	0	0	0	0	0	M	M	M	M	1	1	0
417	4	13	0	0	0	0	0	0	M	M	M	M	1	1	0

AREA II ZONES 637 AND 408-410

TONIGHT...FAIR.

FRIDAY....SUNNY AND CONTINUED WARM AND DRY. LOCAL GUSTY AFTERNOON WINDS.
AIR DISPERSAL...POOR TONIGHT AND GOOD FRIDAY...LAL 1.

ZONE	RGN	TIME	WX	TMP	RH	WND	D1	D2	TMX	TMN	RMX	RMN	AL	TL	FM
637	6	13	0	-2	2	3	0	0	M	M	M	M	1	1	0
408	4	13	0	-2	2	3	0	0	M	M	M	M	1	1	0
409	4	13	0	-2	2	3	0	0	M	M	M	M	1	1	0
410	4	13	0	-2	2	3	0	0	M	M	M	M	1	1	0

AREA III ZONES 401-407.

TONIGHT...FAIR.

FRIDAY...SUNNY AND CONTINUED WARM AND DRY. LOCAL GUSTY AFTERNOON WINDS.

AIR DISPERSAL...POOR TONIGHT AND GOOD FRIDAY...LAL 1.

ZONE	RGN	TIME	WX	TMP	RH	WND	D1	D2	TMX	TMN	RMX	RMN	AL	TL	FM
401	4	13	0	-2	3	2	0	0	M	M	M	M	1	1	0
402	4	13	0	-2	3	2	0	0	M	M	M	M	1	1	0
403	4	13	0	-2	3	3	0	0	M	M	M	M	1	1	0
404	4	13	0	-2	3	2	0	0	M	M	M	M	1	1	0
405	4	13	0	-2	3	2	0	0	M	M	M	M	1	1	0
406	4	13	0	-2	3	2	0	0	M	M	M	M	1	1	0
407	4	13	0	-2	3	2	0	0	M	M	M	M	1	1	0

IDAHO STATE DEPT LANDS	WX	TMP	RH	WND	AL	TL	FM
GARDEN VALLEY.....	0	86	19	W/10	1	1	6
COUNCIL.....	0	87	12	W/10	1	1	7

....SPECIAL WEATHER STATEMENT....AN UPPER LEVEL LOW PRESSURE SYSTEM WILL BE NUDGING TOWARD THE WEST COAST FRIDAY FOR A LITTLE COOLING WEST AND NORTHERN PORTIONS OF THE DISTRICT. THIS LATER DEVELOPMENT SHOULD BRING SOME INCREASE IN WINDS LATER FRIDAY AFTERNOON AND SATURDAY... ESPECIALLY AT HIGHER ELEVATIONS. MORE COOLING CAN BE EXPECTED SATURDAY.

END BOISE FIRE WEATHER

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Hammer

Fire: Mortar Ck

Date and Time 8/3/79 0900 mdt

Location BNF

Forecast No. 1

Weather Discussion: A weak short wave trof will move over Idaho today. Winds will increase today and decrease somewhat Saturday. A few clouds may be seen but little moisture is present for any convective activity.

Forecast for Shift (Time) Friday

Weather: Sunny warm and dry. A few small cumulus may develop this afternoon.

Temperature: High today in the 80s in the valleys and 70s on the ridges.

Humidity: Min rel hum 20-25 percent.

Ridge Top Wind: westerly 15-20 increasing to 20-25 with higher gust this afternoon.

Slope Winds: winds becoming upslope 5-9 with heating and increasing to 8-15 this afternoon. Winds blowing southwesterly down the Middle Fork 8-15 with higher gusts this afternoon. Winds erratic near canyon mouths.

Stability: Air stable in the morning becoming a little unstable in the afternoon.

Outlook for next shift: fair with temperatures in the 40s tonight. Good humidity recovery,..70-80 percent in the valleys and 60-70 percent on the slopes. Winds beginning to diminish a little becoming mostly west to southwest 6-10 mph by early morning.

Further Outlook (36-48 hours): Saturday...Winds lighter than friday. Otherwise continued fair dry and warm.

UPDATED MOBILE UNIT FORECAST

NWS, Boise Idaho

8/3/79 1000 mdt Mortar Ck Fire

.....RED FLAG WARNING.....

Marine air spilling over the Cascades has increased the surface pressure gradient with a brisk west to northwest wind flow aloft. Generally west to southwest winds between 15 and 30 mph with some higher gusts over higher ridges this afternoon and evening. Warm dry conditions will persist over the entire forecast area today and saturday except for a little cooler in the west and north.

Extended forecast for sunday thru tuesday....mostly fair with near normal temperatures.

Extended outlook for Aug 8-12...dry with near or above normal temperatures.

Hammer

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Hammer

Fire: Mortar Ck

Date and Time 8/3/79 1800 mdt

Location BNF

Forecast No. # 3

Weather Discussion: ....Red Flag Warning....ENDING TONIGHT.
LOw pressure over eastern idaho along with marine air spilling over the cascades has increased the pressure gradient over the pacific northwest. This coupled with west to northwest flow aloft is resulting in increased wind over the area.

Forecast for Shift (Time) Friday night and Saturday.

Weather: Clear tonight and mostly sunny saturday.. Smoke only restriction to visibility.

Temperature: low tonight in the 40s. high saturday. mid 80s is the valley bottom and near 70 on the upper ridges.

Humidity: Max rel hum 60 percent on the ridges and near 80 percent in the valley. MIN REL HUM SAT 8-15 PERCENT

Ridge Top Wind: Westerly winds to 30 mph with higher gusts this evening diminishing to 15 to 20 after sunset and to 10-15 by morning. Winds picking up again saturday afternoon to 15-20.

Slope Winds:
winds generally southwesterly 15-25 but erratic near side canyon mouths. winds diminishing to 10-15 and to southwest 8-12 early saturday.

Stability: winds increasing again sat afternoon to 10-15 with gusts.

winds should keep air mixing enough so no inversion should form tonight.

Outlook for next shift: Saturday night.....clear, little cahnge in temperature or humidity. winds mostly southwesterly, diminishing still further should be southwesterly 5-10 mph.

Further Outlook (36-48 hours): Mostly fair...continued warm and dry.

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Hammer

Fire: Mortar Ck

Date and Time 8/4/79

Location BNF (Challis)

Forecast No. 5

Weather Discussion: Southwesterly flow aloft to continue over the forecast area. Some moisture moving slowly northward from old Mexico will require watching during the next few days. Could possibly show up in this area about monday

Forecast for Shift (Time) Saturday night

Weather: Clear and smoky.

Temperature: Min temp from mid 40s in valley bottom and in the 60s on ridge tops.

Humidity: Max rel hum 60 percent valleys and 40 percent ridges

Ridge Top Wind: southwesterly winds across the ridge tops 10-15 mph with occasional higher gusts. winds diminishing about sunset.

Slope Winds: Upslope upcanyon winds diminishing after sunset. Winds becoming variable to downslope 2-4 mph.

Stability:

Air becoming stable with top of inversion expected to be about 8500 feet.

Outlook for next shift:

sunday...very little change from today..temps continuing in the 75-90 range. Min rel hum near 10 percent. Also winds similar to saturdays.

Further Outlook (36-48 hours):

Continued hot and dry with slight chance of some moisture later Monday from the south.

NWS, BOISE, IDAHO

1

FORECASTER: Hammer

FIRE: Mortar Ck

DATE AND TIME: 8/5/79

LOCATION: BNF (Challis)

FORECAST NO. 7

WEATHER DISCUSSION:....Near Red Flag Conditions Persisting,..... low fuel moistures, low relative humidities and strong afternoon winds... Moderate surface winds from pressure gradient and afternoon heating coupled with high winds aloft surfacing during the afternoon will again bring gusty winds. Moisture moving from the southwest will pretty much be restricted to southeast ID, However a few buildups will occur in the area with only a slight chance of a thunderstorm.

FORECAST FOR SHIFT(TIME) Sunday

WEATHER: Mostly sunny and smokey. A few afternoon buildups. Slight chance of Thunderstorm.

TEMPERATURE: Near 90 in the valley bottom and 80 on the ridges.

HUMIDITY: Min rel hum 7-15 percent.

STABILITY: Unstable today...inversion again tonight.

RIDGE TOP WIND: Mostly southwesterly 15-20 this morning increasing to 20-25 with higher gusts this afternoon. Winds diminishing a little again about sunset.

SLOPE WINDS: Variable winds this morning but with a southerly component most areas of 5-10 mph. Increasing south to southwest wind in the Middle Fork 15-20 with higher gusts this afternoon. Upslope-upcanyon starting with heating in the other drainages. Winds becoming 8-14 mph this afternoon, except south to southwest 15-25 with higher gusts on slopes exposed to southwest winds.

OUTLOOK FOR NEXT SHIFT:

Sunday night....Mostly fair. Min temps 40-60. Max rel hum 40-60 percent. Winds similar to last night.

FURTHER OUTLOOK (36-48 Hours);

Continued hot and dry...little change in the present weather is expected.

8/7

NATIONAL WEATHER SERVICE FORECAST OFFICE, BOISE IDAHO, AUG 7 1979
AFTERNOON FIRE WEATHER FORECAST ISSUED AT 1600 MDT TUESDAY

AREA 1 ZONES 411-417
TONIGHT...PARTLY CLOUDY TO CLOUDY WITH WIDELY SCATTERED THUNDERSTORMS ...WITH SOME WETTING RAIN TIL MIDNIGHT. FAIR TEMPERATURE RECOVERY AND GOOD HUMIDITY RECOVERY.

WEDNESDAY...VARIABLE CLOUDINESS WITH FEW THUNDERSTORMS IN THE AFTERNOON WITH LOCAL BRIEF WETTING RAIN. SLIGHTLY WARMER.
AIR DISPERSAL...FAIR TONIGHT AND GOOD WEDNESDAY. LAL 2/3

AREA 11 ZONES 637 AND 408-410
TONIGHT...MOSTLY CLEAR ZONE 637 BECOMING PARTLY CLOUDY ZONE 408 WITH ISOLATED THUNDERSHOWER TIL MIDNIGHT. VARIABLE CLOUDS REMAINDER ZONES WITH WIDELY SCATTERED THUNDERSHOWER...FEW WITH WETTING RAIN TIL MIDNIGHT. FAIR TEMPERATURE RECOVERY AND GOOD HUMIDITY RECOVERY.

TUESDAY...PARTLY CLOUDY WEST ZONES AND VARIABLE CLOUDS EAST ZONES WITH WIDELY SCATTERED THUNDERSTORMS AND LOCAL WETTING RAINS BY AFTERNOON.
AIR DISPERSAL...FAIR TO POOR TONIGHT AND EXCELLENT WEDNESDAY. LAL1/2/3

AREA 111 ZONES 401-407

TONIGHT...CLEAR TO PARTLY CLOUDY ZONES 401,404 AND PARTLY CLOUDY WITH FEW THUNDERSTORMS REMAINDER AREA TIL MIDNIGHT. FAIR TEMPERATURE RECOVERY AND FAIR TO GOOD HUMIDITY RECOVERY. WINDS BECOMING LIGHT.

WEDNESDAY...GENERALLY PARTLY CLOUDY WITH FEW THUNDERSTORMS MAINLY EASTERN ZONES. WINDS BECOMING SOUTHWEST 10 TO 20 MPH RIDGETOPS IN THE AFTERNOON WITH HIGHER ERRATIC GUSTS NEAR THUNDERSTORMS.

AIR DISPERSAL...POOR TONIGHT AND EXCELLENT WEDNESDAY LAL 1/2

BOISE NATIONAL FOREST - PREDICTED

----------08/07/79--FCST--22:29GMT----------

STAT'N	MSGC	DY	HR	RH	HRS	WDY	V	TH	LO	MO	IC	SC	EC	BI	FL	MC	R	BI	EC
CNSCAD	C3P3	8	13	17	4	54	C	9	29	3	43	11	18	34	33	5	V	35	19
LNDMRK	C2P3	8	13	15	51	67	T	10	16	3	51	12	65	65	48	5	V	67	66
GRVLLY	C3P2	8	13	20	67	81	T	10	33	2	56	17	14	38	37	5	V	39	15
IDNCTY	C3P2	8	13	18	51	95	T	12	0	7	50	13	17	36	26	3+	H	37	17
[illegible]																			
[illegible]																			17

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Hammer

Fire: Mortar Ck.

Date and Time 8/8/79 1300 mdt

Location Boise & Challis NF

Forecast No. 17

Weather Discussion: Considerable cloudy cover extends from central Idaho southward over northwestern Nevada. This system of clouds will move to the northeast and east. Upper air flow will persist out of the southwest.

Forecast for Shift (Time) Wednesday afternoon and night.

Weather: Cloudy with widely scattered showers this afternoon tappering off tonight. Chance of isolated thunderstorms.

Temperature: Highs this afternoon from near 70 on the ridges to near 80 in the valleys. Low tonight mostly in the mid 40s to mid 50s.
Humidity: Min rel hum this afternoon 30-35 percent. Max rel hum tonight 60-80 percent.

Ridge Top Wind: southwesterly 5-10 mph.

Slope Winds: Winds generally light and variable except southwesterly 4-8 mph on exposed slopes. Gusty erratic winds in the vicinity of thundershowers.
Stability:

Unstable this afternoon becoming stable tonight.

Outlook for next shift:

Thursday...Clearing with temperatures warming and humidity lowering. Little increase in winds..Southwesterly on ridges 10-15 and up to 9 on the slopes.

Further Outlook (36-48 hours):

Hot and dry conditions returning for friday.

MOBILE UNIT FORECAST

NWS, Boise, Idaho

17

Forecaster: Hammer

Fire: Mortar Ck

Date and Time 8/9/79 0530 mdt

Location Boise & Challis NF

Forecast No. 19

Weather Discussion: Cloudiness which covered the area yesterday has moved to the east and northeast with the only remains over southeast Idaho. Ridge aloft is building in again over the Pacific Northwest. This will be a return to warmer and drier weather.

Forecast for Shift (Time) Thursday

Weather: Mostly sunny with only a slight chance of afternoon buildups.

Temperature: Highs today near 70 on the ridges and low 80s in the valleys.

Humidity: Min rel hum 20-25 percent.

Ridge Top Wind: Forecast winds aloft charts show light and variable winds from the surface to 12 thousand feet. Any ridge winds would be less than 7 mph and have a westerly direction this afternoon.

Slope Winds: Winds again down the Middle Fork about 4-8 mph. Otherwise upslope-upcanyon winds developing with slope heating. East slope upslope component about 3-7 mph late this morning. Afternoon upslope components reaching max of 5-9 mph late this afternoon.

Stability: Inversion dissipating later this morning with unstable air this afternoon.

Outlook for next shift:

Thursday night...Clear with min temps from the upper 30s in the valleys to the 50s on the ridges. Max relative humidity 40-60 percent. Winds becoming downslope-downcanyon 2-4 mph.

Further Outlook (36-48 hours):

Continued warming and drying trend with max temp reaching near 90 on Friday. Not much change in winds expected...however, possibly a few mph stronger from the additional heating.

Plans File

NWS, Boise, Idaho

Forecaster: Hammer

Date and Time 8/9/79

Fire: Mortar Ck

Location Boise & Challis NF

Forecast No. " 20

Weather Discussion: No changes seen in the present weather picture as a high pressure ridge continued to build over the Pacific Northwest. This will result in temperatures a little higher and humidities a little lower. A few cumulus buildups during the heat of the day.

Forecast for Shift (Time) Thursday night.

Weather: Clear and smokey.

Temperature: Lows in the upper 30s in the valleys and near 50 on the ridges.

Min fire camp 26.

Humidity: Max rel hum from 50 percent in the valley to 40 percent on the ridges.

Ridge Top Wind: Light variable winds on the ridges less than 5 mph.

Slope Winds: Winds becoming downslope-downcanyon 2-5 mph after sunset.

Stability: Air becoming stable with inversion forming topping about 7000 to 7500 feet. Inversion beginning to dissipate about 10 am.

Outlook for next shift:

Friday...Mostly sunny with a few cumulus buildups in the afternoon. Max temp near 90 in the valleys and 75 on the ridge tops. Min rel hum 10-15 percent. Slight increase in winds 2-4 mph.

Further Outlook (36-48 hours):

Continued hot and dry. Little change in the winds seen at this time.

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Hammer

Fire: Mortar Ck.

Date and Time: 8/10/79 1300 mdt

Location Boise & Challis NF

Forecast No. 23

Weather Discussion: Flat pressure gradient at the surface over the area. High pressure ridge aloft over Washington and Oregon moving eastward over Idaho. This will move flow aloft a little more to the west.

Forecast for Shift (Time) Friday night

Weather: Clear and smokey.

Temperature: Lows near 40 in the valley and mid 50s at the higher elevations.

Humidity: Humidity recovery...50 percent in the valleys to 40 percent on the ridges.

Ridge Top Wind: Light variable winds mostly westerly less than 5 mph after sunset.

Slope Winds: Winds becoming downslope-downcanyon 2-5 mph after sunset.

Stability: Air becoming stable with inversion forming topping about 7000-7500 feet.

Outlook for next shift:
Saturday...Mostly sunny with a few cumulus buildups. Highs in the low 90s in the valleys and 75 on the ridges. Min rel hum 8-15 percent. Little change in the winds over today.

Further Outlook (36-48 hours):
Continued hot and dry. Little change in the wind pattern seen at this time.

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: Mosquar Cr.

Date and Time Aug. 10, 1979 1700 MDT

Location F.C. Boise N.F.

REVISED 2000 MDT

Forecast No. 24

Weather Discussion: Ridge aloft with flat pressure gradient surface and aloft today and Saturday. Little moisture increase next 24 hours for inceasing chance late afternoon thunderstorms by ~~Sunday~~ SATURDAY. Meanwhile, continued warm and dry..

Forecast for Shift (Time) Day.. Saturday 0600-1800

Weather: Mostly sunny, hot and dry with light local winds. CHANCE OF FEW THUNDERSTORMS AFTERNOON AND EVENING. RISK GUSTY WINDS

Temperature: Maximum at 5000 ft. 92.. at 8000 ft. 80

Humidity: Minimum at 5000 ft. 12 % at 8000 ft. 18 %

Ridge Top Wind: West 12 mph at 9000 ft.

Slope Winds: Light upslope sunny exposed slopes 3-5 mph by noon.
Upslope 8-12 mph afternoon south and west slopes.

Stability: Air stable below 7000 ft. until near noon, then unstable surface to 16000 ft. remainder day.

Outlook for next shift: Saturday Night 8/11/79 1800 to 0600 Sunday

Partly cloudy with little more winds, less and slower temperature and humidity recovery.

Further Outlook (36-48 hours):
Sunday.. 8/12/79 Partly cloudy with chance of scattered showers or thundershowers by evening. Not quite as hot or dry but stronger winds by afternoon.

[redacted] UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: Mortar Cr.

Date and Time 8/11/79 0530 AM MDT

Location F.C. Boise/Challis

Forecast No. 25

Weather Discussion: Flow aloft becoming more southerly with more moisture. So we will have more cloudiness and chance of showers next several days.

Forecast for Shift (Time) Day.. Saturday

Weather: Partly cloudy with few brief light showers & thundershowers late afternoon & evening.

Temperature: Maximum at 5000 ft. .. 88° at 8000 ft..77°

Humidity: Minimum at 5000 ft.... 18 % at 8000 ft..28 %

Ridge Top Wind: Southwest 15 mph

Slope Winds: Upslope 3-5 mph exposed slopes morning.increasing to 8-12 mph afternoon on south & west facing slopes.

Stability: Air stable until about 10 am, then unstable remainder day from ground to 20,000 ft.

Outlook for next shift: Saturday night to Sunday morning.. Chance of thundershowers ending after dark . Partly cloudy with slower temperature recovery but better humidity recovery.

Further Outlook (36-48 hours): Sunday.. 8/12/79 DAY

Variable cloudiness with scattered showers and few thundershowers afternoon and evening. Not quite as hot or dry..

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OOSSS
NATIONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO AUGUST 11,1979
MORNING FIRE WEATHER FORECAST ISSUED 0930 MDT SATURDAY

DISCUSSION...AREAS OF MOISTURE CONTINUE TO DRIFT NORTHWARD AND EASTWARD FROM NEVADA AND OREGON. CONSIDERABLE CLOUDINESS COVERS THE CENTRAL MOUNTAIN REGION OF IDAHO. ALSO SATELLITE PICTURE SHOWS CONSIDERABLE CLOUDINESS OVER CENTRAL AND NORTHERN NEVADA. SUFFICIENT MOISTURE OVER DISTRICT FOR WIDELY SCATTERED AFTERNOON/EVENING SHOWERS.

AREA I ZONES 411-417
TODAY...PARTLY SUNNY..A LITTLE WARMER AND DRYER MOST ZONES..WITH WIDELY SHOWERS/THUNDERSHOWERS.

FREE AIR WIND...WEST TO SOUTHWEST 10-15 MPH.

TONIGHT...THUNDERSHOWERS GENERALLY ENDING AROUND MIDNIGHT BECOMING FAIR TO PARTLY CLOUDY.
SUNDAY...PARTLY SUNNY AND WARM. CONTINUED WIDELY SCATTERED AFTERNOON AND EVENING THUNDERSHOWERS.
AIR DISPERSAL...GOOD TODAY...POOR TONIGHT...GOOD SUNDAY
AREA II ZONES 637 AND 408-410

TODAY..MOSTLY SUNNY WARM AND DRY. WIDELY SCATTERED SHOWERS AND THUNDERSHOWERS.

FREE AIR WIND...WEST TO SOUTHWEST 10-15 MPH.

TONIGHT...THUNDERHOWERS ENDING AROUND MIDNIGHT BECOMING FAIR TO PARTLY CLOUDY.

SUNDAY...LITTLE CHANGE FROM TODAY.

AIR DISPERSAL..TODAY GOOD TONITE POOR SUNDAY GOOD

AREA III ZONES 401-407
TODAY...MOSTLY SUNNY WARM AND DRY WITH WIDELY SCATTERED SHOWERS AND THUNDERSHOWERS.
FREE AIR WIND...WEST TO SOUTHWEST 10-15 MPH.

TONIGHT...PARTLY CLOUDY WITH ISOLATED THUNDERSHOWERS PERSISTING THRU THE NIGHT.
SUNDAY...LITTLE CHANGE FROM TODAY.
AIR DISPERSAL... TODAY GOOD TONIGHT POOR SUNDAY GOOD

EXTENDED FORECAST FOR MONDAY THROUGH WEDNESDAY...CONTINUED WARM AND MOSTLY DRY.

EXTENDED OUTLOOK FOR AUGUST 15 TO AUGUST 19...CONTINUED WARM WITH LITTLE IF ANY PRECIPITATION.

ZONE FORECAST CHANGES..CHANGE LAL TO 2 ZONES 408 AND 409.

END BOISE FIRE WEATHER

File Copy 23

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: Mortar Cr. Fire

Date and Time Aug. 12, 79 0530 AM MDT

Location F.C. Bruce Mdws.

Forecast No. 28

Weather Discussion: Southerly flow aloft with increasing moisture will bring some relief to fire area by increased fuel moistures.

Forecast for Shift (Time) Day: Sunday: 8-12-79

Weather: Variable cloudiness with scattered light showers and few thundershowers late afternoon and evening.

Temperature: Maximum today at 5000 ft. 72 at 8000 ft. 68

Humidity: Minimum today at 5000 ft.. 32% at 8000 ft. 38 %

Ridge Top Wind: South 15 mph morning increasing to 20 afternoon.

Slope Winds: Light upslope 2-4 mph morning increasing to 10-15 exposed southern slope afternoon. Winds locally gusty near & during thunderstorms.

Stability: Airmass becoming unstable all areas by noon. Stable morning below 7000 ft.

Outlook for next shift: Sunday night-Monday morning..

Scattered showers with some wetting eastern areas at higher elevations. Mild with higher humidities. Gusty winds with thundershowers but diminishing by midnite.

Further Outlook (36-48 hours):

Monday-8-13-79... Continued showery/cooler with higher humidities and fuel moistures.

FILE COPY

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: Mortar Creek

Date and Time 1300 MDT Aug 12, 1979

Location F/C Boise-Challis

Forecast No. 29

Weather Discussion: Moist Southerly flow over fire will continue through Monday night with wetting rains. Total precipitation amounts will range from 1/4 inch lower elevations NW portion to over 1/2 inch higher elevations SE portion.

Forecast for Shift (Time) Night- 1800 Sunday-0600 Monday

Weather: Occasional light rain, cool with high humidities. Wetting rains of one tenth inch or more most areas.

Temperature: Minimum at 5000 feet.. 50 at 8000 ft. 45

Humidity: Maximum at 5000 ft. 90% at 8000 ft 100 %

Ridge Top Wind: South 10 mph.

Slope Winds: Light and variable winds 2-4 mph.

Stability: Airmass stable by sunset. Smoke, if any, river bottom only.

Outlook for next shift: Monday- 8-13-79

Mostly cloudy, cool and humid with occasional showers. Scattered wetting showers most areas.

Further Outlook (36-48 hours): Monday night-Tuesday morning

Decreasing showers, continued cool with high humidities and light winds.

Extended outlook for Tuesday-Thursday.. Fair weather with a warming and drying trend.

:S
ATIONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO AUGUST 12,1979
ORNING FIRE WEATHER FORECAST ISSUED 0930 MDT SUNDAY

SCUSSION...SUBTROPICAL MOISTURE HAS INCREASED MARKEDLY TODAY FROM THE
SERT SOUTHWEST NORTH TO CENTRAL IDAHO. THIS WILL BRING SCATTERED
HOWER/ THUNDERSHOWER ACTIVITY AND LOCAL WETTING RAINS TO OUR DISTRICT
DAY AND MONDAY.

EA I ZONES 411-417
DAY...VARIABLE CLOUDS WITH WIDELY SCATTERED SHOWERS/THUNDERSHOWERS AND
CAL GUSTY WINDS.

EE AIR WIND...WEST TO SOUTHWEST 10-20 MPH.

NIGHT...SCATTERED SHOWERS/FEW THUNDERSHOWERS PERSISTING.

NDAY...SCATTERED SHOWERS/THUNDERHOWERS WITH AREAS OF WETTING RAINS.

R DISPERSAL...GOOD TODAY...FAIR TONIGHT...GOOD MONDAY
EA II ZONES 637 AND 408-410

..Y..VARIABLE CLOUDS AND COOLER. SCATTERED SHOWERS AND
UNDERSHOWERS WITH LOCAL WETTING RAINS HIGHER ELEVATIONS.
CAL GUSTY WINDS.
EE AIR WIND...SOUTHERLY 10-20 MPH.

NIGHT...MOSTLY CLOUDY WITH SCATTERED SHOWERS/THUNDERHOWERS
ERSISTING.

NDAY...CONTINUED SHOWER/THUNDERSHOWER ACTIVITY WITH WETTING RAINS
ECOMING MORE WIDESPREAD.
R DISPERSAL..TODAY GOOD TONITE FAIR MONDAY GOOD

EA III ZONES 401-407
DAY...CLOUDY AND COOLER WITH SCATTERED SHOWERS/THUNDERSHOWERS AND
CAL WETTING RAINS. LOCAL GUSTY WINDS.
EE AIR WIND...SOUTH 10-20 MPH.

NIGHT...CONTINUED SCATTERED SHOWERS/FEW THUNDERSHOWERS.

NDAY...SCATTERED SHOWERS/THUNDERSHOWERS WITH WETTING RAINS BECOMING
RE WIDESPREAD.
R DISPERSAL...GOOD TODAY AND MONDAY FAIR TONIGHT

TENDED FORECAST FOR TUESDAY THROUGH THURSDAY...WARMING AND DRYING.

TENDED OUTLOOK FOR AUGUST 17 TO AUGUST 19.....WARM WITH
TTLE IF ANY PRECIPITATION.

D BOISE FIRE WEATHER

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: Mortar Creek

Date and Time 8-12-79 1730 MDT

Location F/C, Boise/Challis

Forecast No. 30

Weather Discussion: Moist Southerly flow will continue next 2 days, however heaviest precipitation has already fallen. Temperatures, humidities and fuel moistures will continue low fire activity next 2 days.

Forecast for Shift (Time) Monday 8/13/79 Day

Weather: Fog & low clouds morning will hamper air operations. Conditions improving about 10 am becoming partly cloudy. Mostly cloudy afternoon with scattered light showers.

Temperature: Maximum at 5000 ft. 74 at 8000 ft. 65

Humidity: Minimum at 5000 ft. 40 % at 8000 ft. 45 %

Ridge Top Wind: South 8 mph at 9000 ft.

Slope Winds: Light and variable morning , 5-8 afternoon.

Stability: Airmass stable morning becoming usntable by 11 am with heavy buildups and risk afternoon thunderstorm.

Outlook for next shift: Monday night- Tuesday Morning..
Variable cloudiness with few showers, mild but with high humidities.

Further Outlook (36-48 hours): Tuesday.. 8/14/79
Mostly cloudy with scattered showers , cool with high daytime humidities.

Outlook for Wednesday - Friday.. Mostly sunny, warmer and drying Wednesday and Thursday. Partly cloudy, windy and not as warm Friday ..

FILE COPY 27

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: Mortar Creek

Date and Time Monday, 8-13-79 0530 MDT

Location F.C., Bruce Mdws.

Forecast No. 31

Weather Discussion: Moist Southerly flow will continue through Monday night. Precipitation will be more showery but average from one tenth to three tenths more today and this evening. Clearing most likely about mid day Tuesday.

Forecast for Shift (Time) No Day Shift- Monday-Aug.13.79

Weather: Cloudy and cool with occasional light rain with heavier showers mid to late afternoon.

Temperature: Maximum 62 at 5000 ft and 57 at 8000 ft.

Humidity: Minimum ? 60 at 5000 ft and 75 at 8000 ft.

Ridge Top Wind: Northeast 12 mph

Slope Winds: None

Stability: Airmass stable morning becoming unstable afternoon.

Outlook for next shift: Monday Night-Tuesday Morning

Decreasing showers but mostly cloudy, foggy, cool and wet.

Further Outlook (36-48 hours): Tuesday- Day Shift-
Low clouds and fog most valleys and river canyons will hamper air operations. Improving conditions by mid day becoming partly cloudy afternoon. Little warmer and drier afternoon. Chance few light rain showers late afternoon.

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: Mortar Creek

Date and Time Aug. 13,79 1330 MDT

Location F.C.Bruce Mdws.

Forecast No. 32

Weather Discussion: South to Southeast flow over very moist air over fire will continue through tonight. More Southwesterly and drier flow by Tuesday afternoon. Morning forecast looks O.K.

Forecast for Shift (Time) Night- 1800 Monday -0600 Tuesday

Weather: Cloudy with light showers, low clouds and fog obscuring mountains and some valleys by morning. Littel snow on highest peaks by morning.

Temperature: Lows at 5000 ft. 48 at 8000 ft 42

Humidity: Maximum at 5000 ft 100 % at 8000 ft 100 %

Ridge Top Wind: East to northeast 10 mph

Slope Winds: None

Stability: Unstable til near midnite, then stable by morning.

Outlook for next shift: Day- Tuesday -0600-1800

Fog and low clouds obscuring mountain tops and many valley bottoms. Partial clearing by mid day with some sunny intervals. Variable cloudiness with few light showers afternoon. Little warmer and drier afternoon.

Further Outlook (36-48 hours):

Tuesday Night.. Clearing and cooler with ground fog high vallies and Mid=Fork river by morning. Lows 25 high vallies and mountain tops and 40-45 middle fork River bottom.

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: Mortar Creek

Date and Time 8-13-79

Location F.C.Bruce Mdws.

Forecast No. 33

Weather Discussion: Moist Southeasterly flow aloft diminishing with a Southwesterly drier flow Tuesday. Enough moisture for considerable cloudiness and scattered showers mainly afternoon. Warmer and drier days but cool nights with excellent humidity recovery. Fog and low clouds late nights and early mornings.

Forecast for Shift (Time) Day- Tuesday 8-14-79

Weather: Considerable fog and low clouds morning. Partial clearing by noon. Partly sunny mid day with few light showers afternoon. Little warmer and drier.

Temperature: Maximum temperature mostly 60's.

Humidity: Minimum humidity 40's.

Ridge Top Wind: Southeast 10 becoming Southwest 12 afternoon.

Slope Winds: Light upslope 4-6 afternoon.

Stability: Airmass stable morning becoming very unstable by afternoon.

Outlook for next shift: Tuesday Night-Wwednesday morning

Clearing and cooler Tuesday night with excellent humidity recovery. Patchy low ground fog high valleys and river bottom.

Further Outlook (36-48 hours):

Wednesday.8-15-79 Partly sunny , little warmer and drier.

3-5 Day forecast for Thursday- Friday

Slow warming and drying trend with temperatures little below normal Thursday and a little above normal by Friday. Highs at 7000 ft. mostly in the 70 s. Lows in the 40!s. Chance of some afternoon showers but no wetting rains.

Xerox copy 50

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Rain-em-out-Gift

Fire: Mortar Creek

Date and Time 0600 MDT Tuesday 8-14-79

Location F/C. Bruce Mdws.

Forecast No. 34

Weather Discussion: Flow aloft more Southwesterly but still enough moisture for scattered showers and few thundershowers mainly afternoons and evenings.

Forecast for Shift (Time) Day- Tuesday-8-14-79

Weather: Variable cloudiness with scattered showers and thundershowers mainly afternoon and evening. Little warmer & drier.

Temperature: Maximum at 5000 ft. 78... at 8000 ft. 70

Humidity: Minimum at 5000 ft. 38 %.. at 8000 ft. 48 %

Ridge Top Wind: Southwest 18 mph at 9000 ft.

Slope Winds: Light upslope 3-5 morning increasing to 5-7 mph afternoon. Locally gusty Southwesterly winds to 25 mph afternoon near showers.

Stability: Airmass stable morning becoming very unstable afternoon.

Outlook for next shift: Tuesday Night-Wednesday morning.. Showers decreasing by sunset and ending by dark. Partial clearing with fair temperature recovery but excellent humidity recovery. Some patchy thin ground fog but should not hamper air operations...

Further Outlook (36-48 hours): Wednesday. 8-15-79 Day Shift

Partly sunny, little warmer and little drier but with few afternoon showers. Temperatures 3-5 degrees warmer and humidities 3-5 % lower afternoon. Not much change winds.

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: Mortar Creek

Date and Time 8-14-79 1300 MDT

Location F?C. Bruce Mdws.

Forecast No. 35

Weather Discussion: Flow aloft Southwesterly with enough moisture for widely scattered showers mainly afternoons. Little drier air next few days with slow warming and drying trend.

Forecast for Shift (Time) Night. 1800-0600 Tues-Wed.

Weather: Variable cloudiness with few light showers early evening. Partly cloudy and cooler by dark with diminishing winds. Excellent humidity recovery and good temperature recovery.

Temperature: Minimum at 5000 feet. 45.. at 7000 ft 38

Humidity: Maximum 100 per cent

Ridge Top Wind: Southwest 12 mph

Slope Winds: Decreasing at sunset becoming calm most areas.

Stability: Airmass unstable til sunset, then stable by midnite with good inversion by morning.

Outlook for next shift: Wednesday.8-15-79

Patchy ground fog higher valleys(Bruce Meadowms) with heavier fog and low clouds in Middle Fork River bottom. Ground fog lifting by 0900 and River fog by 11 am. Becoming partly sunny little warmer and drier.

Further Outlook (36-48 hours):

Wednesday night.. Clear and cool with good rapid temperature and humidity recovery. Frost high valleys. Few patches thin ground fog by morning.

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: MortarCreek

Date and Time 8-14-79 1730 MDT

Location F/C, Bruce Mdws

Forecast No. 36

Weather Discussion: Enough moisture & instability in Southwesterly flow for continued scattered showers & few thundershowers next several days with slow warming and little drying.

Forecast for Shift (Time) Day- Wednesday- 8-15-79

Weather: Partly cloudy with scattered showers & thundershowers afternoon & evening. Little warmer & little drier. Chance fog along River morning til 10 am.

Temperature: Maximum at 5000 ft. 78 at 8000 ft. 70

Humidity: Minimum at 5000 ft. 30 % at 8000 ft 40%

Ridge Top Wind: Southwest 15 mph at 9000 ft.

Slope Winds: Light upslope 3-5 morning increasing to 6-8 by afternoon. Winds locally gusty near showers to 25 mph.

Stability: Airmass stable morning with weak inversion surface to 7000 ft. Unstable by noon through evening.

Outlook for next shift: Wednesday night-Thursday morning 8-15/8-16

Showers and thundershowers decreasing by sunset and ending by dark. Partial clearing with fair temperature and good humidity recovery. Winds diminishing becoming light and variable.

Further Outlook (36-48 hours): Thursday- Da shift 8-16-79

Little more sunshine than Wednesday , little warmer and drier but with few afternoon light showers and thundershowers.

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Rainy Gift

Fire: Mortar Creek

Date and Time Wednesday 8-15-79
0600

Location Challis N.F.

Forecast No. 37

Weather Discussion: Enough moisture in Southwesterly flow aloft for continuation of diurnal showers & thundershowers, some wetting, with only slight warming & drying.

Forecast for Shift (Time) Day- Wednesday 8-15-79

Weather: Heavy fog this morning dissipating about 10:30. Partly cloudy most of day with scattered thundershowers late afternoon & evening.

Temperature: Maximum at 5000 ft. 78 at 8000 ft. 68

Humidity: Mimimum at 5000 ft. 35 % at 8000 ft. 42 %

Ridge Top Wind: South-SouthWest 10 mph

Slope Winds: 3-5 mph by noon and 6-8 late afternoon. Locally gusty near & during thundershowers.

Stability: Airmass stable with surface inversion 1,000 feet deep. Fog & low clouds beginning to lift mid-morning high valleys & about noon River Canyons. Air unstable late afternoon.

Outlook for next shift: Wednesday Night.. Showers & thundershowers ending after dark. Partial clearing but with areas of fog and low clouds . Lows temperatures near 40.

Further Outlook (36-48 hours): Thursday, 8-16-79

Areas of fog and low clouds dissipating about mid-morning. Partly sunny, little warmer and drier. Chance of few light showers again late afternoon & evening. High temperatures in the 70's except low 80's lower elevations along River.

V

IONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO AUGUST 15,1979
ING FIRE WEATHER FORECAST ISSUED 0930 MDT WEDNESDAY

USSION...ADDITIONAL TROPICAL MOISTURE CONTINUES TO MOVE NORTH INTO
DISTRICT TODAY AND WILL BE COUPLED WITH RESIDUAL MOISTURE FROM MON-
RAIN. GRADUAL WARMING AND DRYING WILL OCCUR HOWEVER THRU THURS-
PRODUCING WIDELY SCATTERED MAINLY WET AFTN AND EVENING SHOWERS/
NDERSHOWERS THRU THURSDAY WITH LESS AREAL COVERAGE THAN TUESDAY.
I ZONES 411-417
Y: PARTLY CLOUDY AND A LITTLE WARMER WITH WIDELY SCATTERED SHOWERS
THUNDERSHOWERS.

AIR WIND...SOUTHERLY 8-15 MPH

IGHT...PARTLY CLOUDY WITH ISOLATED SHOWERS OR THUNDERSHOWERS.

SDAY: PARTLY CLOUDY WITH WIDELY SCATTERED SHOWERS/THUNDERSHOWERS.

DISPERSAL...GOOD TODAY AND THURSDAY..POOR TONIGHT
II ZONES 637 AND 408-410

Y: PARTLY CLOUDY WITH WIDELY SCATTERED SHOWERS/THUNDERSHOWERS.
ITTLE WARMER.

AIR WIND...SOUTH TO SOUTHWEST 10-15 MPH.

IGHT...SHOWERS/THUNDERSHOWERS GENERALLY ENDING AROUND MIDNIGHT
MING MOSTLY FAIR.

SDAY: MOSTLY FAIR BUT WITH ISOLATED AFTERNOON AND EVENING THUNDER-
ERS. WARMER.
DISPERSAL..GOOD TODAY AND THURSDAY...POOR TONIGHT

A III ZONES 401-407
AY: PARTLY CLOUDY WITH WIDELY SCATTERED SHOWERS AND THUNDERSHOWERS.
ITTLE WARMER.

AIR WIND...SOUTH TO SOUTHWEST 10-15 MPH.
IGHT: PARTLY CLOUDY WITH ISOLATED THUNDERSHOWERS LINGERING.

RSDAY: PARTLY CLOUDY WITH WIDELY SCATTERED SHOWERS/THUNDERSHOWERS.

ISPERSAL...GOOD TODAY AND THURSDAY.....POOR TONIGHT

ENDED FORECAST FOR FRIDAY THRU SUNDAY..... A LITTLE WARMER WITH
E AFTERNOON AND EVENING THUNDERSHOWER ACTIVITY.

ENDED OUTLOOK FOR AUGUST 20 TO AUGUST 24.....WARM WITH CHANCE
A FEW SHOWERS/THUNDERSHOWERS.

BOISE FIRE WEATHER

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: Mortar Creek

Date and Time 8-16-79 0600 MDT

Location Challis N.F.

Forecast No. 39

Weather Discussion: Not Much Change.. SSW'ly flow aloft with just enough moisture for chance of a thunderstorm late afternoons over fire. Slow warming trend of daytime temperatures with little drying.

Forecast for Shift (Time) Day- Thursday- 8-16-79

Weather: Patchy ground fog dissipating by 0900, otherwise mostly sunny. Chance of a thunderstorm late afternoon.

Temperature: Maximum at 5000 ft. 80 at 8000 ft. 70

Humidity: Minimum at 5000 ft. 20 % at 8000 ft. 30 %

Ridge Top Wind: South-Southwest 12

Slope Winds: Light upslope 3-5 bu mid morning increasing to 8-10 mph afternoon, but higher gusts to 20 some exposed south slopes. Risk gusty winds if thunderstorms build.

Stability: Airmass very stable mormig with surface inversion to near 7000 ft. Inversion lifting and air becoming unstable by mid afternoon.

Outlook for next shift: Day-Friday-8-17-79

Mostly sunny, warm and dry. Risk late afternoon thunderstorm.

Further Outlook (36-48 hours): Saturday-8-18-79

Warm and dry but chance of afternoon thunderstorms with gusty winds.

Maximum temperature Wednesday at Fire Camp- 70
Minimum temperature this morning 2 " - 32

IONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO AUGUST 16,1979
RNING FIRE WEATHER FORECAST ISSUED 0930 MDT THURSDAY

CUSSION...SOUTHWESTERLY FLOW CONTINUES TO MOVE NORTH INTO IDAHO
AY. GRADUAL WARMING AND SLOW DRYING IS DECREASING CHANCES FOR
WERS/THUNDERSHOWERS THRU FRIDAY WILL HAVE SIGNIFICANT EFFECT ON
E AND 10 #4 173). A FEW SHOWERS/THUNDERSHOWERS WILL OCCUR MOST
AS TODAY BUT WITH MUCH LESS AREAL COVERAGE THAN WEDNESDAY.
A I ZONES 411-417
AY: FAIR AND A LITTLE WARMER WITH A FEW SHOWERS/THUNDERSHOWERS
TLY OVER MOUNTAINS.

E AIR WIND...S - SW 10-15 MPH

IGHT...A FEW AFTERNOON LINGERING SHOWERS/THUNDERSHOWERS. LIGHT
DS. MODERSTR HUMIDITY RECOVERY.
IDAY....FAIR AND WARMER AND CONTINUING TO DRY WITH SLIGHT CHANCE FOR
WERS/THUNDERSHOWERS.
DISPERSAL...GOOD TODAY AND FRIDAY....POOR TONIGHT
A II ZONES 637 AND 408-410

AY: MOSTLY FAIR WITH A FEW SHOWERS/THUNDERSHOWERS.
ITTLE WARMER AND DRIER.

E AIR WIND...SOUTH TO SOUTHWEST 10-15 MPH.

IGHT...A FEW SHOWERS/THUNDERSHOWERS GENERALLY ENDING AROUND MIDNIGHT
OMING MOSTLY FAIR WITH MODERATE HUMIDITY RECOVERY.

IDAY....MOSTLY FAIR BUT A FEW AFTERNOON AND EVENING THUNDER-
WERS. WARMER AND DRIER.
DISPERSAL..GOOD TODAY AND FRIDAY.....POOR TONIGHT

A III ZONES 401-407
AY: PARTLY CLOUDY WITH A FEW SHOWERS AND THUNDERSHOWERS.
ITTLE WARMER AND DRIER.

E AIR WIND...SOUTH TO SOUTHWEST 10-15 MPH.
IGHT: DECREASING CLOUDS WITH A FEW LINGERING SHOWERS/THUNDERSHOWERS.

IDAY....FAIR, WARM AND MOSTLY DRY WITH A FEW SHOWERS/THUNDERSHOWERS.

DISPERSAL...GOOD TODAY AND FRIDAY.....POOR TONIGHT

ENDED FORECAST-FOR SATURDAY THRU MONDAY....A FEW MOUNTAIN SHOWERS
R THE WEEKEND OTHERWISE WARM AND DRY.

ENDED OUTLOOK FOR AUGUST 20 TO AUGUST 24.....WARM WITH CHANCE
A FEW SHOWERS/THUNDERSHOWERS.

BOISE FIRE WEATHER

MOBILE UNIT FORECAST

NWS, Boise, Idaho

Forecaster: Frank Gift

Fire: Mortar Creek

Date and Time 8-16-79 1300MDT

Location Challis N.F.

Forecast No. 40

Weather Discussion: Thunderstorms over fire this afternoon will be ending this evening around 9 PM. Southwesterly flow aloft with enough moisture for few more thunderstorms afternoons next few days. Not much change in weather pattern.

Forecast for Shift (Time) Thursday- 0600-1800 MDT 8-17-79

Weather: Patchy ground fog some valleys and along river bottom, otherwise clear and cool morning. Mostly sunny but with chance of thunderstorms late afternoon & evening.

Temperature: Maxium at 5000 ft. 78 at 8000 ft. 67

Humidity: Minimum at 5000 ft. 22% at 8000 ft. 30%

Ridge Top Wind: South-Southwest 12 mph
Winds gusty & variable during thunderstorms.

Slope Winds: Upslope 2-3 mph by mid morning increasing to 7-10 mph afternoon except 12-18 mph exposed southern slopes.

Stability: Stable with surface inversion early morning with tops near 7000 ft, breaking by 0900. Air unstable afternoon.

Outlook for next shift: Friday -8-18-79 0600-1800 MDT
Partly sunny with chance of few afternoon thundershowers, not much change temperature or humidity. Little stronger winds in the afternoon.

Further Outlook (36-48 hours): Saturday-8-19-79 Day Shift
Mostly sunny, little warmer and drier with west to southwest winds afternoon.

NWS, BOISE, IDAHO

FORECASTER: Frank Gift

FIRE: Mortar Creek

DATE AND TIME: 1300 8-17-79

LOCATION: Challis N.F.

FORECAST NO. 43

WEATHER DISCUSSION: Moist Southerly flow continuing through Saturday with more thundershowers mainly afternoon & evenings. Patchy ground fog early mornings high valleys (Base Camp).

FORECAST FOR SHIFT(TIME) Day -0600-2000 Saturday 8-18-79

WEATHER: Patchy ground fog early morning lifting about 0900. Otherwise mostly sunny morning with scattered thundershowers afternoon and evening hours ending about dark.

TEMPERATURE:

Maximum at 5000 ft. 78 at 8000 ft. 68

HUMIDITY: Minimum at 5000 ft. 25 % at 8000 ft. 35 %

RIDGE TOP WIND: South 12 mph

SLOPE WINDS: Light upslope 3-5 morning increasing to 6-8 afternoon but stronger 8-12 exposed southwest slopes. Gusty & variable winds during thunderstorms.

STABILITY:

Airmass stable morning with surface inversion about 7000 ft (top). Unstable afternoon & evening.

OUTLOOK FOR NEXT SHIFT:

Sunday- 8-19-78 Day shift

Mostly sunny, little warmer and drier with few brief afternoon thunderstorms. Slope winds little stronger. Temperatures near 82 bottom fire and 70 highest elevations.

FURTHER OUTLOOK (36-48 Hours);

Monday-8-20-79 Day shift

Partly sunny with increasing showers and thundershowers. Not much change temperature or humidity.

TIONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO AUGUST 17,1979
RNING FIRE WEATHER FORECAST ISSUED 0930 MDT FRIDAY

SCUSSION...SOUTHWESTERLY FLOW CONTINUES TO MOVE TROPICAL MOISTURE
TO NRN INTMN REGION. THIS THREAT OF SHOWERS/THUNDERSHOWERS WILL
NTINUE INTO THE WEEKEND. WARMING AND DRYING IN MOST ZONES WILL CON-
NUE TO DRY MOST FUELS SINCE SHOWERS ARE EXPECTED TO HAVE LESS AREAL
VERAGE.
EA I ZONES 411-417
DAY: MOSTLY FAIR AND A LITTLE WARMER/DRIER WITH A FEW SHOWERS/THUNDER-
OWERS THIS AFTERNOON AND EVENING.

E AIR WIND...S - SW 10-15 MPH

NIGHT...ISOLAED AFTERNOON AND EVENING SHOWERS/THUNDERSHOWERS. LIGHT
NDS. MODERATE HUMIDITY RECOVERY.
TURDAY...WARMER AND CONTINUING TO DRY BUT WITH WITH ISOLATED
OWERS/THUNDERSHOWERS.
R DISPERSAL...GOOD TODAY AND SATURDAY.....POOR TONIGHT
EA II ZONES 637 AND 408-410

DAY: MOSTLY FAIR, WARMER AND DRIER WITH A FEW SHOWERS/THUNDER-
OWERS THIS AFTERNOON AND EVENING.

EE AIR WIND...SOUTH TO SOUTHWEST 10-15 MPH.

NIGHT...A FEW SHOWERS/THUNDERSHOWERS GENERALLY ENDING AROUND MID-
GHT THEN BECOMING FAIR WITH MODERATE HUMIDITY RECOVERY.

TURDAY....MOSTLY FAIR, WARMER, AND DRIER BUT WITH A FEW AFTERNOON
D EVENING SHOWERS/THUNDERSHOWERS.
R DISPERSAL..GOOD TODAY AND SATURDAY.....POOR TONIGHT

EA III ZONES 401-407
DAY: LOCAL MORNING STRATUS THEN BECOMING PARTLY CLOUDY WITH A FEW
OWERS/THUNDERSHOWERS. A LITTLE WARMER AND DRIER.

EE AIR WIND...SOUTH TO SOUTHWEST 10-15 MPH.
GHT: DECREASING CLOUDS/SHOWERS/THUNDERSHOWERS. MODERATE HUMIDITY
COVERY.
TURDAY..FAIR, WARM AND MOSTLY DRY WITH A FEW SHOWERS/THUNDERSHOWERS.
OCCURRENCE OF EARLY MORNING STRATUS MOUNTAIN VALLEYS.
R DISPERSAL...GOOD TODAY AND SATURDAY.....POOR TONIGHT

TENDED FORECAST FOR SUNDAY THRU TUESDAY....WARMER AND DRIER BUT
ITH A FEW SHOWERS/THUNDERSHOWERS.

TENDED OUTLOOK FOR AUGUST 22 TO AUGUST 26....MOSTLY DRY WITH A
AK COOLING TREND.

ND BOISE FIREEXXTHER
- 0

NWS, BOISE, IDAHO

FORECASTER: Hammer FIRE: Mortar Ck.

DATE AND TIME: 8/17/79 1730 mdt LOCATION: Challis NF

FORECAST NO. 44

WEATHER DISCUSSION: Southerly flow aloft to continue to bring showers and thundershowers this evening diminishing tonight. More showers again Saturday afternoon. A weather disturbance expected to reach the area Saturday night should bring more numerous showers...some locally heavy.

FORECAST FOR SHIFT(TIME) Saturday 0600-2000 8/18/79

WEATHER: Patchy ground fog early morning lifting about 0900. Otherwise mostly sunny moring with scattered thundershowers afternoon and evening. Showers becoming more numerous saturday night.

TEMPERATURE: [redacted]

Max temp 5000 ft 73 at 8000 ft 63

HUMIDITY: [redacted]

Min at 5000 ft 30 percent at 8000 ft 35 percent.

RIDGE TOP WIND: Southerly 12 mph.

SLOPE WINDS: Light upslope 3-5 morning increasing to 6-8 in the afternoon. Gusty and variable winds during thunderstorms.

STABILITY: Airmass stable in the morning with surface inversion topping at about 7000 feet. Unstable afternoon and evening.

OUTLOOK FOR NEXT SHIFT: Sunday- 8/19/79 Day shift.

Scattered showers likely throughout the day tappering off at night. temperatures about the same as saturday. Min rel hum 10 percent higher. Winds light upslope except gusty and variable near thunderstorms.

FURTHER OUTLOOK (36-48 Hours);

Partly sunny with scattered showers and thundershowers. Near normal temperatures. Showers becoming more isolated by tuesday and wednesday.

NWS, BOISE, IDAHO

FORECASTER: Hammer FIRE: Mortar Ck.

DATE AND TIME: 8/18/79 1730 mdt LOCATION: Challis NF

FORECAST NO. 46

WEATHER DISCUSSION: A continuous band of moisture extends southward thru Utah and Nevada into Arizona. Southerly flow aloft will continue to pump this moisture northward for afternoon and evening showers.

FORECAST FOR SHIFT(TIME) Sunday (day) 8/19/79

WEATHER: Morning ground fog lifting about 1000. Scattered showers and thundershowers throughout the afternoon into the late evening.

TEMPERATURE: Max temp 5000 ft. 78 at 8000 feet 68

HUMIDITY: Min rel hum 30 percent at 5000 ft and 35 percent at 8000 ft.

RIDGE TOP WIND: southerly winds 7-11 mph.

SLOPE WINDS: light variable winds 2-4 in the morning becoming upslope 5-8 in the afternoon. gusty and variable winds in the vicinity of thunderstorms.

STABILITY: Stable airmass in the morning with inversion topping at about 7000 ft. Airmass unstable in the afternoon and evening.

OUTLOOK FOR NEXT SHIFT: Monday day...8/20/78

Scattered showers and thundershowers persisting. Little change in the temperature, relative humidity or wind.

FURTHER OUTLOOK (36-48 Hours);

Showers becoming more widely scattered. Temperatures up a couple of degrees and humidity down 5 to 10 percent. Little change in the winds.

:AT'ONAL WEATHER SERVICE FORECAST OFFICE, BOISE, IDAHO AUGUST 98,1979
ORNING FIRE WEATHER FORECAST ISSUED 0930 AM MDT THURSDAY

ISCUSSION: WEST TO SOUTHWEST FLOW ALOFT OVER DISTRICT TODAY WITH
OME MOISTURE IN SOUTHERN IDAHO AND WESTERN WYOMING FOR FEW AFTERNOON
HUNDERSHOWERS. ISOLATED BUILDUPS ELSEWHERE.

REA I ZONES 411-417
ODAY...VARIABLE CLOUDS WITH FEW AFTERNOON THUNDERSTORMS. A LITTLE
ARMER. HUMIDITIES DOWN SOMEWHAT.
REE AIR WIND... WEST TO SOUTHWEST 10 TO 15 MPH WITH ERRATIC GUSTS
ICINITY ANY THUNDERSTORMS.
ONIGHT...CHANCE OF THUNDERSTORMS TIL AFTER DARK WITH GOOD TEMP AND
UMIDITY RECOVERY. WINDS BECOMING LIGHT AND SWITCHING TO DOWNSLOPE/
RAINAGE DURING THE NIGHT.
RIDAY..... PARTLY CLOUDY WITH CHANCE FEW THUNDERSTORMS IN THE
FTERNOON. LITTLE CHANGE IN TEMPERATURES AND HUMIDITIES.
IR DISPERSL...GOOD TODAY...POOR TONIGHT...GOOD FRIDAY

REA II ZONES 637 408-410
ODAY...CLEAR TO PARTLY CLOUDY WITH ISOLATED MOUNTAIN BUILDUPS IN
HE AFTERNOON. A LITTLE WARMER WITH HUMIDITIES LOWER.
REE AIR WIND...WEST TO SOUTHWEST 10 TO 15 DURING THE AFTERNOON.
ONIGHT...MOSTLY CLEAR WITH GOOD TEMP AND HUMIDITY RECOVERY.
HURSDAY....CLEAR TO PARTLY CLOUDY WITH FEW AFTERNOON BUILDUPS OVER
HE MOUNTAINS. LITTLE CHANGE IN TEMP AND HUMIDITIES.
IR DISPERSAL...GOOD TODAY...POOR TONIGHT...GOOD FRIDAY.

REA III ZONES 401-407
DAY...CLEAR TO PARTLY CLOUDY WITH FEW AFTERNOON BUILDUPS SOUTH
ND EAST ZONES. TEMPS UP A FEW DEGREES ESPECIALLY EAST WITH HUMID
IES DOWN. WINDS WEST TO SOUTHWEST 10 TO 15 IN THE AFTERNOON.
ONIGHT...MOSTLY CLEAR WITH GOOD TEMP AND FAIR HUMIDITY RECOVERY.
INDS BECOMING LIGHT AFTER SUNSET THEN DOWNSLOPE/DRAINAGE DURING
IE NIGHT.
RIDAY.....CLEAR TO PARTLY CLOUDY WITH AFTERNOON BUILDUPS CHANCE
OLATED THUNDERSTORMS. LITTLE CHANGE IN TEMP OR HUMIDITY.
R DISPERSAL...GOOD TODAY...POOR TONIGHT...GOOD FRIDAY
TENDED FORECAST SATURDAY THROUGH MONDAY.....CONTINUED WARM AND
STLY DRY.
TENDED OUTLOOK THROUGH FRIDAY 17 AUG...CONTINUED WARM AND MOSTLY
Y.
D...BOISE FIRE WEATHERET